

COMPUTER PLAYER!

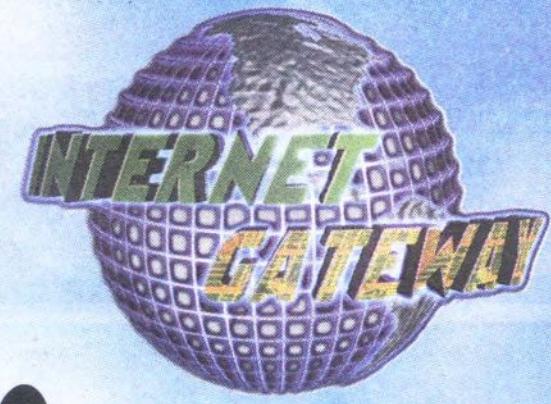
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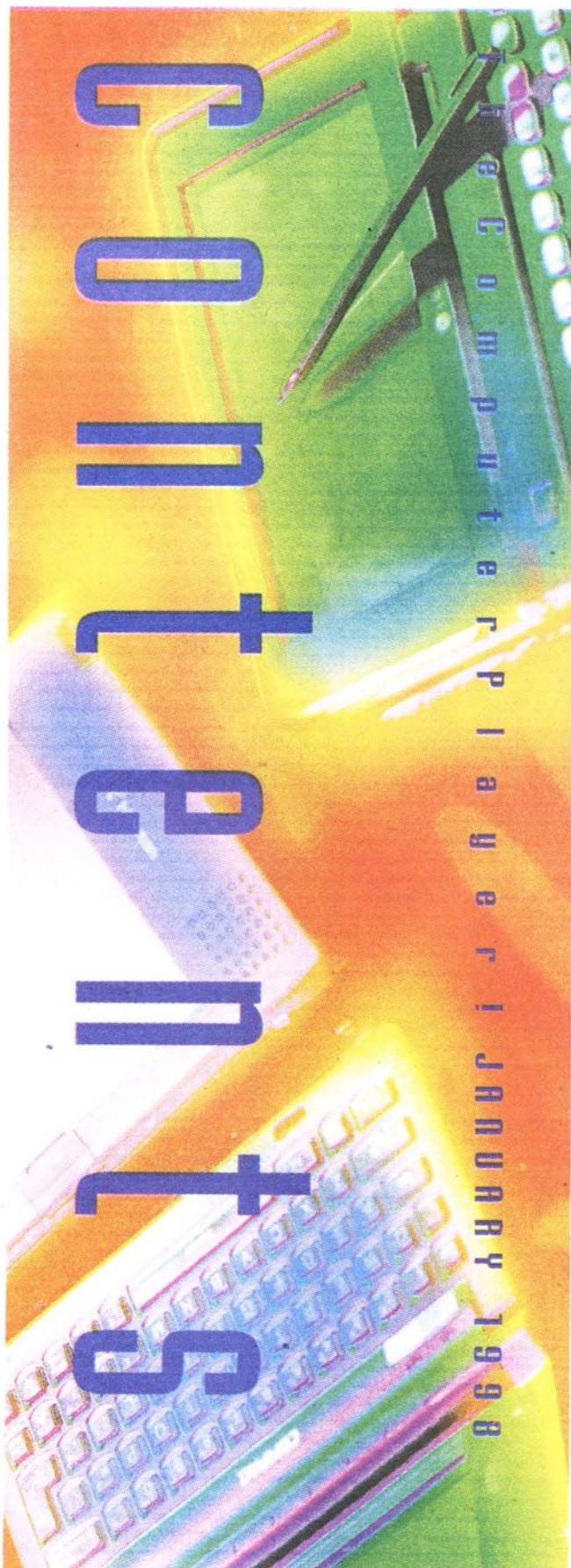
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- EDITORS' CHOICE,
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Reading the digital tea leaves

letter from the editor



Just in time for the New Year as thoughts turn to the future, Nicholas Negroponte (a man with an impeccable prediction pedigree) shared his visions of how humans will use technology in the future during his keynote address at the Canon Digital Solutions Forum in Vancouver.

Negroponte is a senior columnist for *Wired* magazine, co-founder and director of the MIT Media Lab (the interdisciplinary, experimental research centre that focuses exclusively on future forms of human communication—see “Hanging around God’s Office” in Sept. ‘97 issue of *CP!* online, or check out the lab online at <http://www.media.mit.edu>), and author of *Being Digital*.

Much of his speech was spent covering the same ground as his best-selling book, but he expanded on the spread of computers and Internet access internationally. The “digital landscape,” as he calls it, is very bumpy now, with teledensities (the number of phone lines per 100 people) varying from about 80 in North America, to less than one in sub-Saharan Africa, and computer use figures ranging just as widely. He expects this to smooth out, and in its aftermath, for the economic landscape to change dramatically.

The “have” countries have been successful in the atom-based economy (the manufacture, movement and sales of raw resources, finished goods, etc), but, Negroponte notes, in the digital, bit-based economy the goal posts move and the little guys can compete with the multinationals.

Negroponte predicts that once things even out in the areas of teledensity and computer access, poorer countries, such as the Mediterranean nations, will do well because of the “healthy disrespect for authority” they developed as “have nots.” This attitude is in keeping with a “digital sensibility”—something not shared by countries like France and Germany, which he predicts will fare less well in the Digital Age.

The “inner” Net

In addition to his global predictions, Negroponte described how computers will not only surround us, but will eventually become part of us. He predicts that we will sport wearable computer and communication components on various parts of our body—in shoes, rings, and cuff links—which will transmit data to each other through our body.

This “inner” Net may sound fanciful, but it is not only already on the drawing board, prototypes are being tested.

IBM demonstrated transmission of data through the human body more than a year ago. At Fall Comdex ‘96, the data contained on a business card was transferred at 2.4 Kbps from one person to another with a handshake. The possible and very practical applications of this would be cardless access to bank machines, buildings, or instead of a video store card, or credit card signature.

Negroponte, looking further, suggested that we could eventually

transmit “cybercash” from an automated teller (or via Internet access to our bank from our own PCs) to our bodies, changing the oft heard question “got any cash on you” to “got any cash in you?”

A computer in the hand...

While we don’t cover anything quite as futuristic as human data transfer this month, we do take a look at the latest crop of palmtop computers, complete with new operating systems, functions, and advanced connectivity. Lynn Greiner put several of these exciting handheld PCs through their paces and came up with some winners (see page 11).

COMPUTER PLAYER!**COMPUTER PLAYER!****COMPUTER PLAYER!****COMPUTER PLAYER!****COMPUTER PLAYER!****EDITOR’S CHOICE****Editor’s Choice**

The winners of the palmtop survey are among the first recipients of our new Editor’s Choice award. The logo was designed by Graeme Bennett, a talented artist and senior editor at Canada Computer Paper Inc.

Keep your PC safe and healthy

This month we also focus on several areas of computer security. Tim Bingham-Wallis looks at email encryption software technology and products (see page 13), Lynn Greiner tells you how to keep your PC virus-free, and S.J. Ross delves into the proud history of hackers and crackers and offers some tips on keeping these virtual vandals away from your valuable data.

Comdex PacRim ‘98

Comdex PacRim ‘98, one of the first high-technology events of the New Year, comes to the Vancouver Trade and Convention Centre Jan. 20-22, and we give you a peek at some of the keynote speakers, technology areas and exhibitors in our preview article (see page 10), where you can also find details on registration. The *Computer Player!* staff, along with representatives of other Canada Computer Paper Inc. publications will be manning the company’s booths, so drop by to say hello, ask questions or pick up copies of our newest issues.

Turning the page

Faithful OS/2 readers will notice the absence of Kevin Linfield’s *OS/2 Ready* column this month. We have decided to scale down our OS/2 coverage in order to bring readers more hardware and software reviews, and news on other new technologies. Kevin will continue to reply to OS/2 questions in *CP!*’s monthly *You Asked Us* column (see page 28), and he is currently developing a new column that will debut sometime in the New Year. We’ll keep you apprised of his plans.

Enjoy the issue,

Megan Johnston, Associate Editor

YOUR letters please

Letters on issues raised in the paper or general computer topics are welcome. Please be brief. We regret that we are unable to look up stories from past issues, suggest products, or solve all your computer problems. Only those with names and e-mail or snail-mail addresses will be published. Letters may be edited for space or content.

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And the Net debate goes on

One issue that kinda grinded against me was the price thing David (Rosen) mentioned (in “Reason to complain,” November 1997). The Internet is not expensive if you know what to get. Unfortunately, if you’re constantly bombarded by salespeople who constantly spout about their nifty P5-200s and MMX and 4 GB and don’t even know what all that means, it

can get difficult to keep from being swept into the nullsville of information reality.

The Internet is largely a resource and a tool. There’s information available that, as pointed out by Caryn (Mladen), would be difficult to retrieve without the Internet. It’s slow, it’s bulky, and it’s beautiful. Complain about it and you won’t get anywhere. Learn to use it, and it’ll open up to you like nothing else.

Nikolas Trevor

I love the Net because it’s like having the keys to virtually every library in the world, as well as access to every company or product that you are interested in. Well, maybe not quite yet, but it will be. Besides, I can always find what I’m looking for. It’s also environmentally friendly; there’s less regular mail, files, and cabinets to keep. Therefore, less office space utilized. Besides, who wants all that paper around?

Marko Koskenoja

Flying blind

I’m really ticked off with all the praise in various papers and mags about how wonderful

Microsoft’s Flight Simulator 98 is (December issue). I’ve always heard how realistic the program is and how such care is given to detail. Well, I jumped in and plopped down my \$80 (can’t believe I spent that much on a game) and there was no manual? Do people actually learn to fly jets and helicopters without the aid of a flight manual? I think not! Software companies are charging more and giving less to the consumer.

Brian Sellers

Gaming stats

I am doing a marketing research project on computer gaming for school, and I wonder if you have any information on where I can find it other than Statistics Canada.

Alex Yee

Marc Saltzman replies: A few reliable sources for PC/console gaming information (stats, etc.) are: Jupiter Communications (<http://www.jup.com>), VideoGame Advisor (<http://www.vgadvisor.com/welcome.html>), the Software Publisher’s Association (<http://www.spa.org>), and Game Wire (<http://www.game-wire.com>). Hope that helps.

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Vancouverite helps Young Navigators

BY JUNE CAMPBELL

Vancouverite, Emma Smith, has been chosen as a national spokesperson for the Young Navigators Foundation of Canada. The Young Navigator's program is a not-for-profit initiative funded by leaders in Canada's information technology industry. Its mission is to ensure that Canada has the talent it needs to compete and lead in the global information economy. Programs are available to Canadians from eight through to 25 years of age.

Payne, who is vice-president of the WebPool syndicate and the founder and president of the Wired Woman Society, represented the Young Navigators Program to leaders and media representatives at the recent APEC conference in Vancouver.

For more information, check out the Young

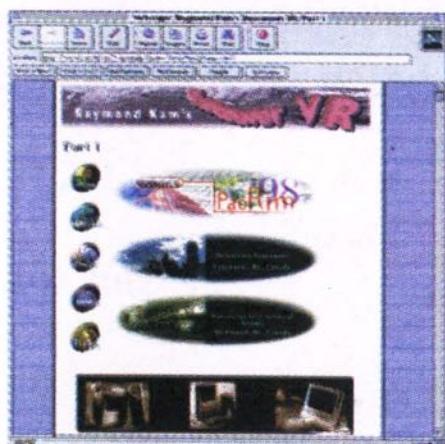
Navigator's Web site at <http://www.youngnavigators.com>.

QTVR from Comdex

Once again, Raymond Kam's Vancouver VR will be going to Comdex PacRim. Like last year, Raymond will have QuickTime VR panoramas and snapshots of the show on his Web site. Just connect to <http://www2.portal.ca/~raymondk/Spider/movies.html> to visit Comdex virtually. A fast Internet connection is recommended, and a QTVR plug-in will be needed for most browsers.

Raymond Kam (raymondk@portal.ca) is well known among Vancouver's multimedia community for his ongoing efforts to present Vancouver panoramas on his Web site. Kam is also one of the first in the world to produce QTVR views of the Mars shots this past summer.

Comdex PacRim '98 is held Jan. 20-22, at



the Vancouver Trade and Convention Centre.

A virtual home for Vancouver musicians

Independent Music in Vancouver now has a virtual home at The Jam (<http://www.thejam.com>). Musicians, recording artists, and their fans will find an online shopping basket for independently released CDs, (with two 30-second sound clips per disc), a demo tape area (three song demo in RealAudio), a random bandname generator, a clubs calendar, a Live Concert section, links to more than 130 Vancouver band Web sites, a business directory, and a band directory.

Owners Jennifer Jensen, Blaine Booth, Jodi Wigmore, Ricardo Villalobos and Steve Whan built the site to help promote the artists. Whan remarked, "We want to help independent musicians, regardless of geographic location or style of music, fulfill their artistic and monetary dreams. We haven't designed it as a commercial site, but if it works into that, well, that'll be okay too."

So far, response from local groups has been positive and bands from Saskatoon, Toronto, Montreal, New York, Florida and Sweden have also expressed interest in our site

The Internet's no place for logic

"Don't be too factual and logical on the Internet," advised Ken Nickerson, general manager of the Microsoft Network Canada (MSN Canada). Speaking to an audience at APEC 97, Nickerson said Microsoft's research found the Internet is an emotional, personal experience for users. The physical proximity to monitors that are less than 21 inches in size triggers issues of personal space that is similar to our response to persons who stand closer to us than we prefer. (A distance of about three feet is comfortable for most North Americans.)

"That's why flame wars erupt so easily in email," said Nickerson, adding that we take things much more personally on the Net than we would if we were reading a letter. Nickerson recommends using feelings, colour, sound, descriptive phrases when on the Internet and keeping logical, factual information to a minimum.

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The British Columbia Institute of Technology celebrated the official opening of its new

continued on page 54

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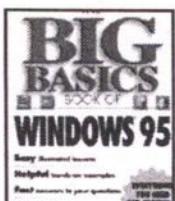
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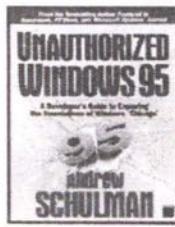
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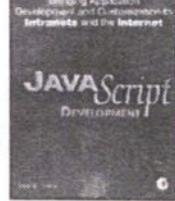
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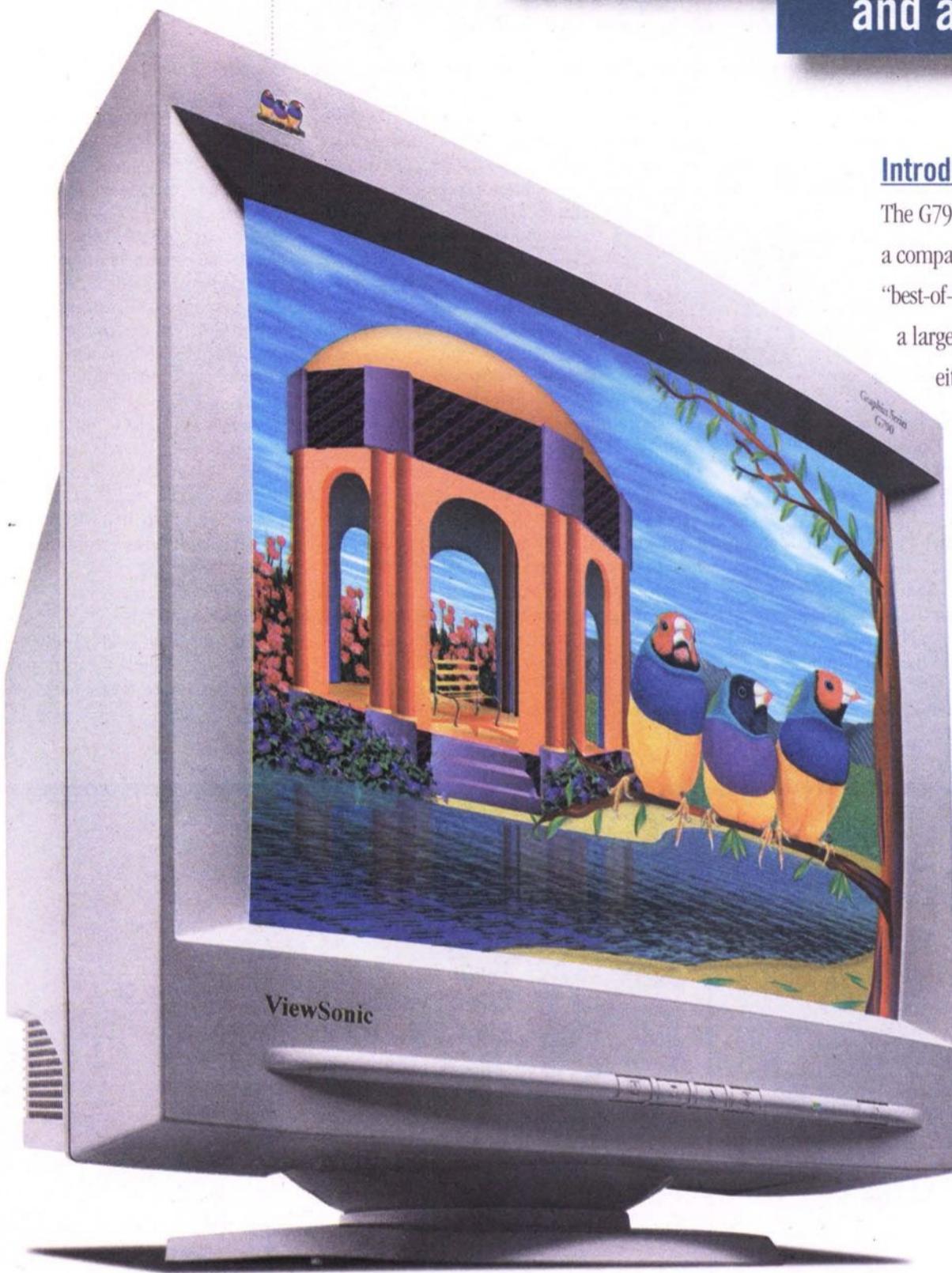
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One of the first—and biggest—high-technology events of the New Year on the West Coast will be Comdex PacRim '98, beginning Jan. 20. While the Vancouver event doesn't compare in sheer size to the "big show" in Las Vegas, it does bring the latest in high-technology hardware and software and ideas to us in the comfort of our own city.

Technology areas

This year, Comdex planners have divided the show floor into technology areas. Each focuses on a specific category of technology, and is supported by conference sessions high-

lighting technology advances and trends. The four technology areas are:

Internet: The showcase for Internet, intranet, extranet products, including Web servers, browsers, development tools, security software, telephony, firewalls, search engines, electronic commerce and multimedia.

Network computing: Find the newest NC models; database and file/mail/video servers; networking storage and delivery solutions, development tools, and network-delivered applications, such as groupware and software for server traffic.

Multimedia: See how the Internet makes multimedia a more powerful tool for corporate commerce, education and presentations, videoconferencing, video servers, publishing and video editing.

Microsoft Partner Pavilion: This technology area showcases the next applications, custom solutions and hardware platforms from Microsoft's partners with the latest products for Windows 95, NT, BackOffice, Visual Basic, ActiveX, and Internet Explorer 4.0.

The speaker's chair

The opening keynote address this year, will be

given by BC Tel president, Don Calder, (Jan. 20, 9 a.m.). His speech, *The Need for Speed*, will cover the telecommunications industry and how it is responding to consumer need for high-speed Internet access. Calder will explain what bigger pipes and faster speeds will really

mean—highlighting what you'll be able to do tomorrow. He will also cover the latest telecomm developments.

On day two (Jan. 21, 9 a.m.), Novell Canada vice-president and general manager, Don Chapman, discusses *The World*

of Me—the control individuals now have over access to information and communication. Chapman will cover the Internet, as well as push/pull technology, worldwide networks, and email, and the freedom and opportunity these provide. He will also cover the concerns that come with these forms of communication: security, manageability, reliability, platforms, cost and performance.

Dan Ling, Microsoft's director of research, delivers his keynote *Microsoft Research: A Peek Into the Future* (Jan. 21, 5 p.m.) on the evening of day two. Ling will discuss the six-year-old Microsoft Research, and the ongo-

ing work on technologies that will be important to the future of computing, including advanced speech technology, computers that will be able to see and interpret what they see, and learn and adapt to an individual's interests, and experience.

The final keynote, *The Internet—Enjoy it while it lasts!*, will be delivered by Dr. Paul Flaherty, the senior research engineer for Digital Equipment (Jan. 22, 9 a.m.). Flaherty will discuss his conjecture that the Internet "phenomenon" is the result of an unusual conjunction of technical and market forces, and that an even greater force is appearing on the horizon. He says the conjunction of Web information, search technology, portable computing, and wireless networking will augment human knowledge, and shift the intellectual burden from fact finding to decision making. Flaherty will discuss what impact this will have on business, politics, culture and society.

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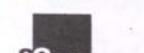
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A computer for your pocket

Handhelds get new functions, OSes, added connectivity

BY LYNN GREINER

Handheld computers and personal digital assistants (PDAs) are hot these days. Although Windows CE hasn't proven to be the ultimate portable operating system Microsoft hoped it would be, there is an increasing number of systems running it. Then there are the smaller handhelds, like the PalmPilot and its IBM clone, the WorkPad, plus the pocket-sized Sharp unit that's trying to dethrone the market leader.

These contraptions come in all sizes and shapes. There are machines almost as big as Toshiba's Libretto sub-notebook, and as small as a credit card (the Franklin Rex). All allow users to synchronize their data with comparable applications on a personal computer.

Most CE machines are still running Windows CE 1.0, but manufacturer's are beginning to release models with CE 2.0. This is good news for the buyers of CE 1.0 machines is that prices have plummeted, and most vendors are offering free upgrades to CE 2.0 when the new models are released (they may already be out as you read this).

Windows CE, for those who haven't already experienced it, is a "lite" version of Windows 95. The interface is the same (but in monochrome—CE 1.0 doesn't support colour), although adapted for touch-screen computers. It includes "pocket" versions of Microsoft Word and Excel, with subsets of the host applications' functionality, that can exchange data with their desktop equivalents. Contact management, scheduling, and tasks are compatible with a tweaked version of Microsoft Schedule+; there's a version on the CD-ROM that comes with CE systems. But CE 1.0 doesn't know how to print, and its infrared interface is only good for exchanging appointments with another CE device.

Windows CE 2.0 includes support for colour displays, improved connectivity, and also has Pocket PowerPoint presentation software. And, (ta-da!) it knows how to print, which is a major enhancement.

Now let's look at the collection of new machines we've gathered since our last roundup.

Apple Newton MessagePad 2100

Apple Canada, <http://www.newton.apple.com>
\$1,400

The Apple Newton MessagePad 2100 was a pleasant surprise. It's the newest addition to

Apple's Newton line, and has handwriting recognition that blew my mind—it even understood my despicable scrawl!

The unit has a 12.4x8.4 cm (4.9x3.3 in.), 480x320 pixel, 16-level gray-scale, backlit display, two PC Card slots, serial and infrared (115Kbps) ports in a 11.9x21 cm (4.7x8.3 in.) package that weighs just under 700 g (1.5 lb.). Input is via a stylus, or an optional (\$140) keyboard. You can tell it to interpret your handwriting, or just save the image of your scribbles. The screen is protected by a cover that folds flat under the Newton when not needed.

Software includes synchronization utilities, a word processor (which requires the keyboard), spreadsheet, email, Web browser, TCP/IP, calendar, address book, outliner, notepad, and call log.

On the down side, it's too big and heavy to fit into a pocket, and everything but the unit itself is an option: the A/C adapter, keyboard, modem, and PC or Mac connection cable will all cost extra, above the already substantial price.

Hewlett Packard 320LX

Hewlett Packard, 800-387-3867,
<http://www.hp.com/handheld>
\$828 (SRP)

The Hewlett Packard 320LX was a late arrival in the Windows CE arena, and HP took advantage of the extra time to make some important improvements. The screen is a generous 640x240 pixels, a full 2.54 cm (1 in.) wider than competing systems. This lets you see full lines of email messages, and several extra columns of spreadsheets. It's still monochrome (the 320LX runs CE 1.0), and is backlit, but glare is still a problem in some lighting.

Because it's a slightly larger machine, its hard, plastic keys are spaced far enough apart to allow touch typing by the small-fingered user with well-trimmed nails.

Applications are standard CE fare, with a couple of exceptions. The 320LX can print, and it has a backup utility that works with optional CompactFlash memory cards.

The price includes a cradle, A/C adapter, and serial cable.

IBM WorkPad

IBM Canada,
<http://www.pc.ibm.com/us/workpad>
\$519

The IBM WorkPad is a PalmPilot in a black

case, with a different logo (IBM knows when to back a winner!). It comes with synchronization cradle, leather slipcase, and a CD-ROM of desktop software (the software for the WorkPad is only Windows 95 and NT compatible, whereas the PalmPilot also gives you Windows 3.1 software).

One benefit provided by IBM for users of the WorkPad and the PalmPilot, will be the downloadable synchronization programs ("conduits") for Lotus Notes, due out shortly.

LG Phenom

LG Electronics,
905-670-0650,
<http://www.lgphenom.com>
\$599,

The LG Phenom we tested was the older, Windows CE 1.1 unit (the new one wasn't available in time for our deadline), but it's still a respectable configuration. It has a built-in 28.8Kbps faxmodem, 4 MB RAM, internal NiMH battery charger, and comes with an A/C adapter, batteries, serial cable, and a spare stylus. A single PC Card slot and 115Kbps infrared port provide additional connectivity. All this is in a package that weighs just under a 450 g (1 lb.).

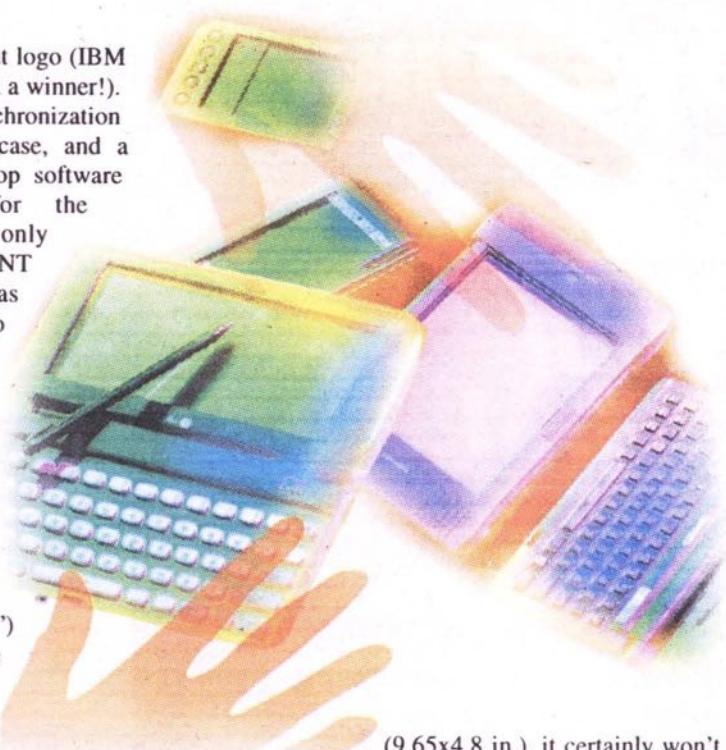
The stylus lives in a groove at the top of the screen; you remove it by pressing one end so the other pops up. The keys are well spaced, and audible feedback tells you if you've made contact, so you can actually type on the thing. Tapping

with the stylus was less effective. Although feedback clicks suggested the machine had sensed the taps, programs refused to launch reliably and other double-click functions took several tries.

NEC MobilePro 700

NEC, 888-8NEC-NOW,
<http://www.nec-computers.com>
\$999

The MobilePro 700 we received was a prototype of NEC's new Windows CE 2.0 device, and it's big enough to be mistaken for a small notebook rather than a handheld PC. At about 675 g (1.5 lb.), and 24.5x12 cm



(9.65x4.8 in.), it certainly won't fit into a pocket!

But a unit of that size can house a bigger screen—7.3 inches, diagonally—and a much better keyboard. The keys are no worse than those on some small notebooks, and the touch is quite acceptable. However, a couple of problems I encountered were that the right shift key was small, I kept hitting the PgUp key next to it, and the space bar didn't always register because the keyboard is so flat. A small slant would cure that one.

The MobilePro runs the standard CE 2.0 applications, including a voice recorder, and can be expanded to 32 MB RAM, for lots of storage. There's a built-in 33.6Kbps faxmodem, a PC Card slot and a Compact Flash memory slot, and an adapter for a

VGA monitor connection is included. Also included is an A/C adapter, synchronization cable, modem cable, and a set of batteries.

The unit is targeted at vertical markets, such as medical personnel, sales, insurance, and law enforcement, where the larger size is offset by the ease of typing.

Nokia 9000i Communicator

Nokia,
<http://www.nokia.com/com9000/n9000i.html>
\$1,500

The Nokia 9000i Communicator isn't exactly an handheld PC. As a matter of fact, it's a digital cellular telephone. But open this rather fat phone, which splits down the middle like a hot dog bun, and you'll find a keyboard, a screen, and lots of functionality.

continued on page 17



MESSAGEPAD



IBM WORKPAD



MOBILE PRO



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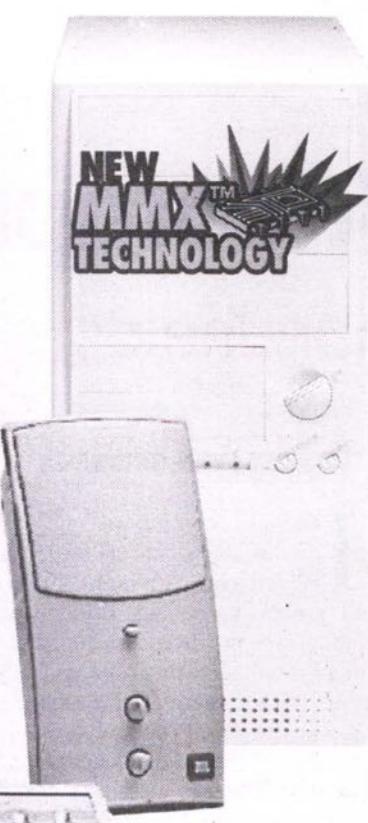
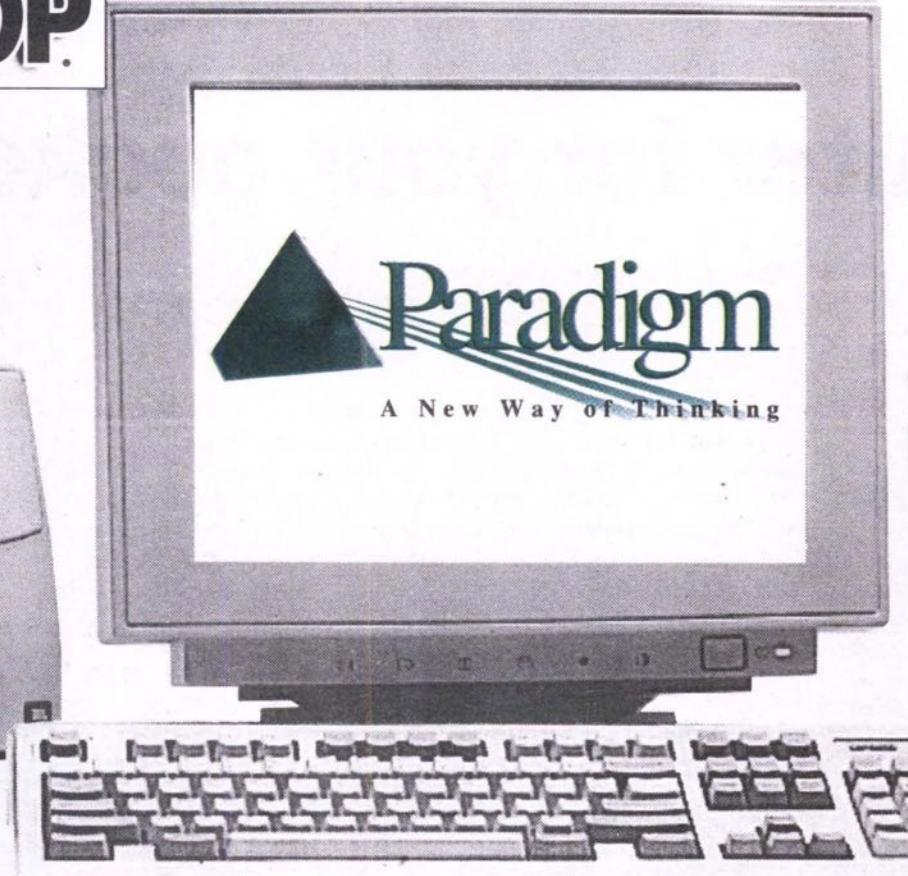
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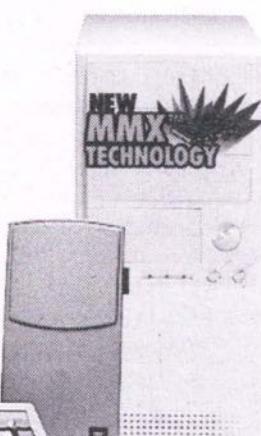


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Virtual lock and key

A look at email encryption software

BY TIMOTHY BINGHAM-WALLIS

You don't have to be paranoid to appreciate secure email. Although more and more people are learning to enjoy the benefits of email, concerns about its security remain. In response, the demand for easy-to-use encryption software has grown.

Why the concern?

While it appears to be private, email is a very public way of communicating. Not only does email bounce all over the globe before reaching its final destination, but it can be stored over accessible systems or forwarded (or blind "cc'd") without your knowledge. Similarly, it is relatively easy to forge email addresses—authenticity should always be questioned online.

Secure email programs tackle both problems of security and authenticity.

What does it do?

Most encryption programs do three things:

- Create a set of virtual keys to lock and unlock messages.
- Scramble and unscramble messages.
- Allow users to sign documents electronically.

Secure email programs scramble (encrypt) email documents—body and attachments—using a complex mathematical equation called "keys." The more complex the equation, the greater the protection. Equations are measured in bits. Low-end encryption starts at around 56 bits, and high-end encryption can reach over 2,000 bits. Unfortunately, there is a trade off: while security goes up with bit size, so, too,

does the time required to unscramble the message.

How does it work?

When you first run a secure email program, it generates two keys, one private and one public. These two keys allow you to scramble and sign messages.

To send someone an encrypted message, you use their public key. This key scrambles the message. Using strange math magic, only the receiver's secret private key can unscramble the message.

Similarly, to authenticate authorship, secure email programs allow users to sign documents electronically. Designated recipients can check the electronic signature to make sure it came from the real sender.

This is all quite simple, and the latest software has made it even easier. In the past, secure email software was quite complex, but the more popular programs now seamlessly integrate into the Mac/Windows desktop. Most major email packages, such as Claris Emailer, Eudora, and Microsoft Outlook, have third-party plug-ins that take away much of the complexity. "Encrypt message" commands are available as toolbar buttons and drop-down menus. In most cases, encrypting a message or its contents is as simple as highlighting the object(s) and clicking.

What are the drawbacks?

One of the major problems facing secure email is compatibility, although some common standards for encrypting messages have already developed. If you want to make sure your email software supports

encryption, make sure it accepts S/MIME messages. S/MIME (or Secure MIME) is a new standard for transferring messages that most new email packages support.

Unfortunately, S/MIME only ensures encrypted messages can be sent effectively; it doesn't address the problem of competing encryption standards. Just as Microsoft Word cannot simply read Corel WordPerfect files, an email message encrypted using one program cannot be read by another. At present, there are no translation utilities. This, of course, raises a

huge obstacle to encryption use. To benefit from secure email, people communicating with you must use the same secure email software.

PGP for Personal Privacy 5.5.1

The most popular—and most contentious—encryption software available is Pretty Good Privacy. PGP, created by Philip R. Zimmermann, is so powerful its use and distribution is regulated by the U.S. government.

continued on page 15

Gobbledygook

To see how encryption works and understand why it takes so long to decode, look at the following example, which shows the results of a high-grade encryption with PGP software of the following sentence: "This message is encrypted."

BEGIN PGP MESSAGE

```
Version: PGP for Personal Privacy 5.5
qANQR1DBwU4DbXtAuwnpTU4QCADK
AKzwTxkb808sdP4Phjm4KNZq+ajVXw
M0A7k
c2eCMFJOpCNmzB2DCwDgr/ttcwDTpE
OZ0H8Q4pYobNsRsF5OHk3JR/drTpURSY
T
IYbUeVJl0yzCHpUATvLGPmZg5Serh5u4
0707QyvMZCVPKwejxbyorNH7wPqQX
WDs
Kkc8HqYUpOcPLNlrvRlmPnlm0zgOuwy
KSKc7SWQb7FzZ/lbQxWY12MgPu/8Q
mEF2
```

rx0258AAK18EzvImX45+nazrjSPuT9r2t
WV8FNhlheelsjKU7SwIBLeWA8kPfHV
NUE+0D4yu/OFdql2a/k4/xmGxRB9a1dE
L15rg0RQZcbHEZftACLMIZDNQC6Wxu
n

VPwl6hTVJdpccfz3XkY/vdfkqWgZINSIo
F2/KgaWeYbW2GGSBv1oQu3dfyDTgHQ
tpxdpX1NpISlP8lHCwv9H7N3fazS9Q2B
2XIYpVjzF67LjGy6l20guzSUdTo280F
msRU+UYlin2WX68Poik29NkacR4VAYA
ohDSSgrqlpqrl22vM3LhNpBCYDp4wabP
e

+PFS6VogBW0wEmK40TpteDMQ+5Dy3
TMJy7mSCmDXJGK/xc9x1SE528nxmTY
VB42Y

LIVrjudEEJlYqCVhrOupqk0gXy5x2zvAEe
Md3EyVx7ellHauSc7DDo7Bv9RT0hvY
oRzKLeGayTCOosn96mg7NQcUM2o+1W
QsI9L8LAu626ah3oJ0cG/HrhMDzxhww
6xU

1uqWg8SgK14=
=r0v
—END PGP MESSAGE—

—Tim Bingham-Wallis

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Knowing your enemy

A primer on keeping your PC virus-free
BY LYNN GREINER

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It always happens when you least expect it—your computer begins to act peculiarly, and you discover that the machine has a virus.

If you're lucky, it's one of the more benign variety that only generates silly messages or bouncing balls. If not, well, you may be faced with a corrupted hard drive, lost data, and hours of work sticking things back together.

A computer virus is a program that was designed to spread, and attack every machine it comes in contact with in some way. Flavours exist for both PC and Macintosh. Viruses can delete or corrupt files, cause the computer to do weird things (one early virus made letters in documents on the screen fall to the bottom of the display), or even effectively destroy a hard drive. There are thousands of viruses in existence, although only a few hundred are in circulation at any time.

A computer virus, like the ones that keep us humans sniffing this time of year, is contagious. It spreads by inserting its program code into other programs. There are several varieties, each of which specializes in infecting a different area of your system's software.

Boot to the head

Boot viruses insert their code into the area of a disk (either hard disk or floppy) whose contents are automatically run when the computer is started. They run first, then load the original boot code to start the machine. While it's running, a boot virus is lurking in memory, either doing its damage, or waiting until its trigger event occurs. For example, the Michelangelo virus busily and

invisibly infects systems, then lurks quietly until March 6 (Michelangelo's birthday), when it destroys the hard drive by overwriting critical data with random characters.

These viruses are spread by booting from an infected diskette, or by booting when an infected diskette is in drive A:. By the time you get the "non-system disk or disk error" message, the system is infected.

File viruses attack executable files (those with .COM or .EXE extensions, or even overlays). Some clobber you immediately, while others wait until trigger dates or events occur. The Christmas Tree virus, for example, displays a full-screen Christmas tree every time an infected file is executed between Dec. 24 and Jan. 1, but waits until April 1 to do its nastiest deed, destroying the Master Boot Record (MBR) on the hard drive so the machine can't start. And Friday the 13th just spreads like crazy until an infected program is executed on Friday the 13th. Then it deletes the program.

Multi-partite viruses combine the nasty elements of boot and file viruses. Hare.7610, for example, infects both MBR and files, and when it triggers on Aug. 22 or Sept. 22, it destroys the hard drive.

Sneaky mutants

Then there are the stealth viruses. They can be any of the above types, but their claim to infamy is that they change slightly ("mutate") as they infect systems. This means that virus detection software, which often works by detecting patterns of code ("signatures") that viruses create, can be fooled into believing no virus is present. Anti-virus software vendors have developed techniques to overcome this problem to some extent, but stealth viruses are still among the trickiest to detect and eradicate.

Possibly the most pesky type of virus—and currently the fastest growing—is the macro virus. It is a virus written in the language developed to allow word-processor or spreadsheet users to automate their work. The main target is Microsoft Word (there are over 1,500 Word macro viruses). Recently, a macro virus that affects Excel spreadsheets has also been discovered.

The original Word macro virus, known as Concept, was a nuisance, but relatively non-destructive. It simply saved every document as a template instead of a document. Now, however, there are Word macro viruses that can even delete all of your files, or reformat your hard drive.

This adds a level of complexity to virus

continued on page 46

Virtual lock and key

continued from page 13

Federal officials were so concerned with its ability to guarantee privacy and confidentiality they labeled it as a munition (yes, like a bullet) and restricted its export. The introduction of PGP touched off a fierce debate over Internet privacy south of the border. It's a debate that still rages. Fortunately, PGP's export restrictions do not extend to Canada.

As mentioned, PGP is the premier encryption technology. Personal, non-commercial versions are available as freeware (to get the latest version with tech support and all the bells and whistles, you will be asked to pay).

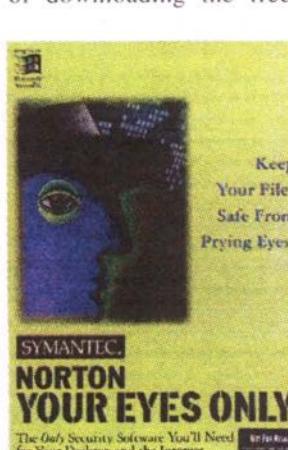
The software can be ordered and downloaded from PGP's home page (<http://www.pgp.com>). This site has a number of FAQs explaining the ins and outs of encryption and are worth reading if you are technically minded.

The latest version, PGP for Personal Privacy 5.5.1, plugs right into your email software and appears along the Windows Task Bar or the Macintosh Menu Bar for ease in securing selected text or entire documents.

One really neat feature in PGP is its ability to encrypt messages from the clipboard. This makes it possible to secure the body of your email even if a plug-in is unavailable for your particular email package. Also, encrypting documents before they are sent as attachments is particularly easy with the new version of PGP.

The only problems with PGP 5.5.1 relate to installation. It installed well on a Mac Powerbook, but wouldn't install properly on a Mac 7500/100. And the installation process took just over an hour to work on my own Dell 166 MHz system. Once installed, however, it worked flawlessly. The interface was excellent for both Claris Emailer and Microsoft Outlook.

A PGP plug-in is also available for the popular Eudora email package. When downloading Eudora, users have the option of downloading the freeware version of PGP.



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A computer for your pocket

continued from page 11

The screen is small—640x200 pixels—but extremely clear and easy to read. Software, which runs under the GEOS 3.0 operating system, includes a telephone directory, fax program, Short Message Service software (the service itself is extra, if your cellular company offers it), Internet software, contacts directory, notepad/in-box, calendar,

calculator, clock, converter (it does everything from weights and measures to currencies), and, just for fun, a music composer.

The keys are small, flat, and offer no feedback—you won't touch type here! But they're well spaced, and control of the unit is split between nine fixed function keys across the top, and four keys beside the display that change according to what you're doing. PC connectivity is either via serial cable or



MOBILE ORGANIZER

infrared.

The entire package weighs just under 450 g (1 lb.), and Nokia claims battery life is about three hours of combined talk/fax and data time.

Sharp SE-500 Mobile Organizer

Sharp Electronics, <http://www.sharp-usa.com/products/mobile/se500.html>
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The Mobile Organizer is aimed squarely at
continued on page 20

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The big picture

Large displays and LCDs hot monitor trends

BY KEVIN LINFIELD

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Eizo, <http://www.eizo.com>
Viewsonic, <http://www.viewsonic.com>
Daytek, <http://www.daytek.ca>
Mitsubishi, <http://www.mitsubishi-display.com>
NEC, <http://www.nec.com>
Sceptre, <http://www.sceptretech.com>
TTX, <http://www.ttxmonitor.com>

Large monitors are still hot. Where bigger is better, 17-inch monitors have come down in price, and now 19-inch units are being offered by major manufacturers. Also new on the market are LCD monitors from companies such as NEC and

Sceptre, which weigh in at less than 2 kg, are only 5 cm thick, can be wall mounted, and are emission-free.

Hyundai offers four 17-inch DeluxScan monitors, with 1,024x768 still the recommended resolution. Eizo is pushing its 19-inch monitors, including the FX-D7, while Viewsonic has divided its monitors into three classes: Professional Series featuring ultra fine dot pitch, high resolutions, and refresh rates up to 160 Hz; the Graphics Series for general business, designed for the mainstream market; and the E2 series for education and entertainment, which are the most affordable, for home user and small office market.

Daytek is offering its new Vista series of 17- and 19-inch monitors with resolutions of up to 1,600x1,200, and Compaq offers its 19-inch V90 monitor that has an 18-inch diagonal viewing surface.

Mitsubishi offers its new Diamond Plus series, including the Diamond Plus 70 model

controls and multilingual on-screen displays with preset modes or user-definable settings.

The newest of the new

LCD monitors are also hot, with NEC featuring large-screen active matrix LCD monitors (14- and 21-inch models) with 0.28 dot pitch. Sceptre is also on the LCD bandwagon, and is featuring both LCD and CRT monitors in 11- to 17-inch models.

And ViewSonic has released its new LCD monitor for a suggested retail price of \$3,119. The 13.8-inch



with a 16-inch diagonal, 0.25 pitch, and a resolution of 1,280x1,024 at 65Hz.

TTX has joined the large monitor market with its new Medallion 8000 series 17- and 21-inch monitors featuring TCO 95 standards. Both models feature full digital

VPA138 ViewPanel has a thickness of under 2.5 inches and only requires 40 Watts of power. It can display at a maximum resolution of 1,024x768 at 75 Hz refresh and is Plug and Play, Energy Star, and MPR-II compliant. ♦

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A computer for your pocket

continued from page 17

the PalmPilot market. It's a nicely designed pocket-sized unit, a bit taller than the PalmPilot, with a clever, permanently attached hard cover that slides underneath

when the unit is in use. The screen is 240x159 pixels (almost twice the size of the PalmPilot's screen), and is backlit and easy to read. There's a built-in 14.4Kbps modem.

Applications include a calendar, task list, notepad, plus a few bonuses, such as an anniversary tracker. I found the software per-

formance to be sluggish, and, well, not too bright at times. For example, when I chose to create a new appointment, the unit asked for a time on the date of the last appointment I'd entered—a week previously. And when you tap an application button at the edge of the screen when the unit is off, it launches, not

what you touched, but the last application that was active.

Another frustration for people used to direct entry, is the procedure for adding appointments. On the PalmPilot, you tap a time, and use the stylized Graffiti character set to fill in the details. The SE-500 makes you first select the "new" button, then fill in fields using an on-screen keyboard, by tapping letters one by one.

A cradle and synchronization software are included. Although the SE-500 doesn't include a personal information management application, it'll work with Outlook 97, Act 3.0, or Lotus Organizer 97, right out of the box, and optional links are available for other products.

US Robotics**PalmPilot****Professional**

3Com Canada,
<http://www.3com.com/palmpilot>

\$519

The US Robotics PalmPilot Professional, along with its WorkPad clone, is the standard by which portable organizers are judged these days. It tucks into a shirt pocket, and weighs less than six ounces. Its 160x160 pixel screen is small, but easy to read, and there's a back-light to improve visibility in poor lighting.

**PALMPILOT**

continued on page 22

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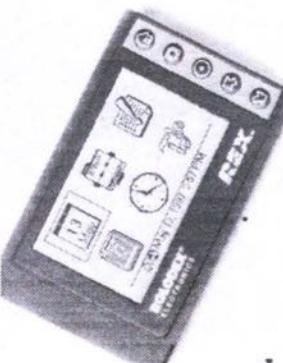
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**The Rex**

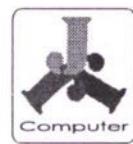
We've only seen specs on the Franklin Rex PC Companion, but it has the potential to be a winner. It's a credit card-sized unit with a small 30-character by nine-line LCD screen and a few buttons that let you scroll through your data. Information is input by stuffing the Rex into your notebook's PC Card slot (or into an optional cradle that attaches to a desktop's serial port), and syncing with your personal information management software. It runs on two lithium batteries, like those in your digital watch.

Because there's no way to enter data directly, and the application software is limited, the Rex, which is priced at US\$130 to US\$180, depending on the model, is not a replacement for a more fully functioned personal digital assistant. As a basic organizer, though, it could fulfill many needs.—Lynn Greiner



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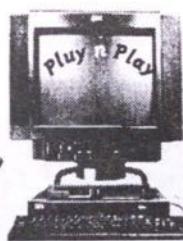
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Start protecting your computer

BY BARRY LEWIS

Do you ever think about security in the course of a day? Perhaps you worry about personal security, such as walking the streets alone at night or a stranger pushing you onto the subway tracks. These are important issues and should not be ignored. If you own a personal computer, however, you also need to consider a differ-

ent kind of security.

Most people, if they consider it at all, seem to think of computer security as something for computer geeks or information systems staff to manage. Yet, what would you do if you lost all the data on that home computer or small office machine right now? Will your home business survive if that article or graphic design is lost because of a hard-drive failure? Can you recover that

essay or paper you spent days completing and have yet to turn in?

One of the few certainties in computing is you will lose data eventually. How easy it will be to recover depends upon regular backups. I know this is a topic that's often mentioned in computing media, but it's important enough to re-iterate. Backup. Do it now.

Peek-a-boo

Recently, a supposed expert expressed surprise and concern in a newspaper article about connecting to the Internet by cable modem (Rogers' Wave service, for example). The anxiety this expert expressed concerns the fact that connecting to the Wave allows you to see other computers and possibly access their files. This however, is generally how networks operate, as most people in the business know. Home users need to be aware, and the cable companies make this very clear, that you are on a peer-to-peer network. Connecting to this type of network means that you can see other computers and they can see you.

To explain the problem—and the solution—we need a little understanding of how PCs share files and what constitutes a network. For the sake of simplicity, we'll define a network as a bunch of computers connected to each other by specific cables and software.

Once you belong to a network, you are able to share files, and that is the problem with cable modems. By being on a network, your cable company offers advanced Internet access. Unfortunately, a byproduct of that access is that you can share files with other users on that network by accident. This is a result of certain options within your PC software.

Microsoft added a feature called Shares to Windows for Workgroups a number of years ago. It also exists in Windows 95. The purpose was to allow users to share (get it?) file folders over a network. Although this is not the purpose of the Wave, it is certainly a byproduct. That is why the cable companies are careful to tell you to turn off Sharing on your computer if you do not want others to see your files. If you

and your neighbor both use the Wave, however, you can use this feature of the network to share files between each other.

The concern, of course, is who else might access your files, unbeknownst to you. That is where security comes in to play.

Tune in, turn off, drop out

When you use Sharing, Microsoft allows you to set up passwords for each shared folder to control access. If your data is not critically important to you and you can live with it spread out across the known world, then these passwords will provide a reasonable level of protection. If the mere thought of others knowing what is in those files sends you screaming from the room, then this is not for you. Turn it off and never use it (the reason you need to be concerned when using a password is that, while connected to the network—or Internet using a cable modem—anyone can try to guess your password, and keep trying until they succeed).

How do you turn Sharing off? In Windows 95, select the Network Neighborhood icon on your desktop and click on the right mouse button. Select Properties and look for the File and Print Sharing button. Select the button and click once. If the two Sharing options are blank, then no sharing is taking place and you are relatively safe from external access. To learn how to turn off the similar options in your Macintosh or Windows 3.11 system, check your Help file.

Finally, if you decide to use Sharing and take the risk, be sure to select and use a strong password on each Share. In my book, *Computer Security for Dummies*, (IDG Books, 1996), there is an entire chapter devoted to passwords and another chapter that offers a practical guide to backing up your data.

Selecting strong passwords or never using file Sharing, combined with regular backups of your data, is a sound way to start protecting your PC. ♦

Barry Lewis is president of Cerberus ISC Inc., an information security consulting firm. His home page can be found at <http://www.cerberus.com>.



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Books

Dyson unveils design for digital age

info box

Release 2.0: A Design for Living in the Digital Age, by Esther Dyson, from Broadway Books (distributed in Canada by Bantam, Doubleday, Dell). \$34.

BY S.J. ROSS

Written by Esther Dyson, recently named the "most powerful woman in Net-erati" by *The New York Times Magazine*, *Release 2.0: A Design for Living in the Digital Age* (Dyson

publishes a monthly newsletter entitled *Release 1.0*) explores the impact and influence of Cyberspace.

"This book, *Release 2.0*, is my 'design for living in the digital age,'" says Dyson. "But it's an architecture, not a blueprint, for the design rules we can use to define and shape the new social contracts of our evolving digital society."

Calling the digital world "the underpinnings of daily life in the 21st century," Dyson explains how technology is changing our world and explores how the digital society will bring profound shifts in the balance of power between consumers and



producers, citizens and governments, and mass media and their audiences.

"The Net offers us a chance to take charge of our own lives and to redefine our role as citizens of local communities and of a global society," states Dyson. "It also hands us the responsibility to govern ourselves, to think for ourselves, to educate our children, to do business honestly, and to work with fellow citizens to design rules we want to live by."

Fundamental conflicts

In *Release 2.0*, Dyson discusses the fundamental conflicts in the spread of digital com-

munication—ranging from conflicts between personal privacy and societal interest in open access to information, to security and freedom, and commerce and community—and examines Internet-related issues, such as content control, security, and intellectual property. She also outlines the choices readers face, and discusses the pros and cons of addressing these issues with decentralized self-regulation. And, to conclude, Dyson provides a plethora of digital rules ranging from "trust but verify" to "always make new mistakes."

Written in a clear and easy-to-read tone, *Release 2.0* is an occasionally simplistic, occasionally profound book that captures the enormous subject of digital living in one long and fascinating diatribe that should intrigue the digitally philosophical. ♦

Ancient principles for modern success

info box

Feng Shui: Career and Feng Shui: Networking, by Lillian Too, from Penguin Books. \$9.99 each.

BY S.J. ROSS

With the recent surge of interest in spirituality and natural lifestyles has come an increased fascination with Feng Shui. Feng Shui (pronounced feng shui), which translates as "wind and water," is a more-than-4,000-year-old Oriental philosophy that blends spiritual and common-sense beliefs to promote harmony between natural and human-made environments.

In other words, by using the principles of Feng Shui to arrange your physical space—such as the placement of furnishings and

accessories—you can enhance your "sheng chi" (positive energy), and reduce "shar chi" (bad energy).

Paging Yoda

"Based on the premise that the quality of the energies that flow around our living space affect our physical well-being, Feng Shui addresses all the ways people can manipulate these energies so that they are beneficial rather than harmful," writes Lillian Too, Harvard MBA and Malaysian businesswoman.

Now, with the release of *Too's Feng Shui: Careers and Feng Shui: Networking*, career-seekers and small and home business operators can use these ancient principles to address modern issues.

Feng Shui: Career looks at how to apply the principles of Feng Shui to your office furnishings and layout to improve career prospects and fulfillment. The book starts with an introduction to Feng Shui, then outlines Feng Shui principles and practices, and

discusses how to use Feng Shui to enhance career success.

Feng Shui: Career highlights the major symbols of career success, such as the potent water element located in the northern corner of the office, as well as individual career orientations to "feel capable and energized at work and really start to enjoy being there." It also discusses how to energize career luck in the home and office.

Too recommends regularly shaped offices with the desk placed in the corner opposite the door. Workers should never sit with a door or window behind them and a column facing them, and should avoid offices at the end of long corridors or facing a staircase or toilet. And, to increase your wealth, place a plant in the southeast corner of your premises.

Reaching out

Feng Shui: Networking focuses on how to use Feng Shui teachings to attract new clients, establish a fruitful network, and

improve success in all areas of life. It discusses the principles of Feng Shui, the Feng Shui symbols, such as wind chimes placed in the northwest corner of the home, and individual success orientations.

Too also examines networking principles and individual compatibility. Tips provided range from displaying dragons and turtles for a perfect balance of yin and yang to avoiding exposed book shelves ("They represent knives cutting into you"), pointed items on your desktop, and overhead beams. "[T]o activate networking-luck, place a solid crystal paperweight on the northwest corner of the desk."

These small, easy-to-read books are packed with beautiful color visuals and a plethora of generally easy-to-implement tips. But does Feng Shui really work? More than 4,000 years of history suggests it might. And, after all, you have nothing to lose by placing a plant or a crystal in a strategic location, and everything to gain. Good luck! ♦

HotWired shares Web principles

info box

HotWired Style: Principles for Building Smart Web Sites, by Jeffrey Veen, from HardWired. \$42.

BY S.J. ROSS

If you want lay-it-on-the-line, start-to-finish advice on Web site creation, *HotWired Style: Principles for Building Smart Web*

Sites is the book for you.

Written by Jeffrey Veen, interface director of HotWired and member of the World Wide Web Consortium's HTML and CSS Editorial Review Board, *HotWired Style* is a straightforward Web design manual that outlines the philosophy and principles behind the HotWired Web site.

"Say this out loud: The Web is not print. The Web is not television. The Web is not a CD-ROM," writes Veen. "Although it has words like books, images like TV, and multimedia like CD-ROMs, the Web is singular. It has its own language, aesthetic, issues, and problems and yet represents a convergence of nearly all

other media."

With 15 chapters—each detailing a different Web site principle, such as *Embrace the Medium, Know your Code, Be Simple, Be Bold, Be Fast, and Beware Multimedia*—this book not only explains Web design tools ranging from HTML (hypertext markup language) and VRML (virtual reality modeling language) to navigational options and graphics, it also explains how to create exciting, interactive sites using Veen's 15 cardinal principles.

Loaded with Web screen shots (such as a Webmonkey page, and pages from Discovery Channel Online and Outside Online), and thankfully making judicious use of

HardWired's traditional neon green and pink colors, the book also discusses a range of common conceptual mistakes, provides tips on avoiding technical problems (ranging from cross-platform frustration to confusing link proliferation), and, especially handy, forecasts future technology that can aid in Web site creation.

Explaining the essential literary, design, and interface elements of Web site creation, *HotWired Style: Principles for Building Smart Web Sites* is a helpful and easy-to-read book for anyone—from novice to expert—who wishes to understand or create dynamic and intelligent Web sites. ♦

Violent games have parallels to porn

Now that holiday gift-giving has come to an end, how many of you, dear readers, gave or received computer or video

games as a present? And what percentage of those were violent?

Well, you might wonder, what counts as a

violent game? Presumably, we'll all agree that games like Doom, or Duke Nukem 3D, where a muscle-bound hero shoots at everything

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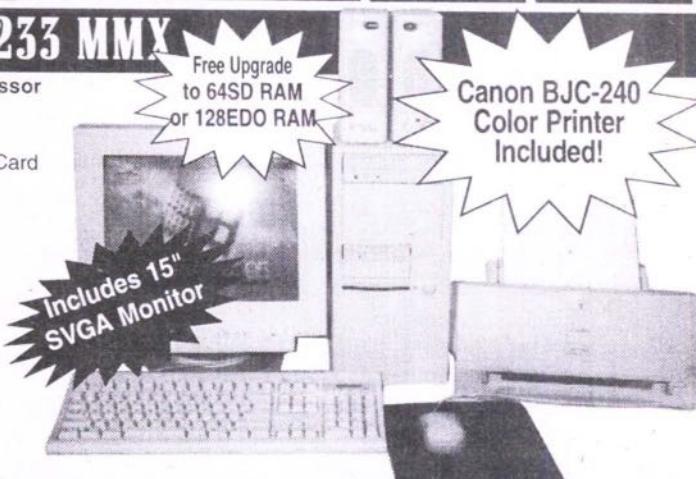
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Software

Alan Zisman

that moves, splattering the walls with gore, are violent.

How about Carmageddon, where drivers use their vehicles to wreak havoc on the roads? Is a game violent if, as Joey, my 13-year-old used to ask, there's no gore? How about the air combat or *Star Wars*-like games, where you're shooting down enemy flyers?

Clearly, there are different levels of violence offered in computer and video games; just as clearly, games with violent themes are popular with many game players. And this is a cause for concern among many parents and teachers.

As both a parent and a teacher of teenagers, I've heard the response "Well, I've been playing violent games for years, and I'm not a psycho killer." And they're right, few game players are homicidal maniacs. There has been research suggesting a link between violent video game playing and later aggressive behaviour (a 1990 review of studies conducted by the U.S.-based National Coalition on Television Violence, for example, claimed nine out of 12 studies reported harmful effects on normal children and adolescents). Similar to the effect of violent TV, it seems, as Funk reported in 1993, there is a clear "short-term relationship between playing violent games and increased aggressive behaviour in younger children."

In many ways, the debate about violence in games reminds me of the debate about pornography. In both cases, you get an industry that claims to be simply giving the market what buyers want. You have critics concerned about social effects, but unable to point to strong cause and effect relationships between games/viewing and later actions.

Violent video and computer games seem like pornography to me in other ways as well. For example, both let the consumer fantasize being a sort of all-conquering hero.

Research about pornography may be instructive, as well. There is no evidence that viewing pornography turns most viewers into rapists. However, there is evidence that viewing violent pornography makes viewers more accepting of violent sex, less sympathetic to victims, and more likely to view sexual violence as a joke.

Similarly, I suspect that there is a relationship between a tolerance for violent video and computer games and a tolerance for actual violence as a way to solve problems—an acceptance that schoolyard bullying and worse, for example, is simply "the way the world is."

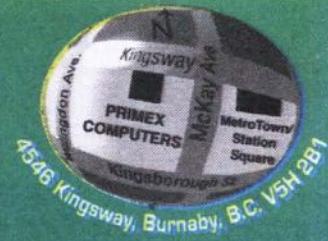
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You asked us...



Modem tricks

Q: I used to be able to use “*67” to block caller ID when I dialed into my local bulletin board. A few months ago, however, my local telephone company (Bell) added a “feature” called “Busy Call Return.” I don’t need this because if my bulletin board is busy then my Mac modem is programmed to call back until it gets a free line. In fact, I got my phone bill a few days ago and found that I’ve been billed for using Busy Call Return many times. What’s happening?

Romeo, via email

David Rosen replies: Ah, progress...ain’t it something? What’s happening is that Bell’s new software is interpreting the “*” from your “*67” as an indication that you want to be notified when your bulletin board’s phone lines are free. In other words, every time your modem re-dials the bulletin board and gets a busy signal, you end up spending 50 cents.

Fortunately, it’s simple to disable Busy Call Return for your modem calls. Simply dial, “*03” (without the quotation marks) and you’ll get two rapid beeps, then a dial tone. These tones indicate that Busy Call Return is now disabled for one call. To incorporate this solution every time you call your bulletin board, here’s what to do:

First, locate where your bulletin-board software stores its phone numbers—probably in the software’s electronic telephone book. Next, add the “*03,” (without the quotes) to the beginning of the telephone number or, if possible, in the place reserved for prefixes (such as dialing “9” to get out or “*67” to block Caller ID). This means that if the telephone number before was “*67, 555-1212” it should now be “*03, *67, 555-1212”. In case you’re wondering, the comma inserts a “pause” command into the dialing sequence and is needed to separate the different phone commands from each other.

Finally, although this solution has been tested within the Bell system, it may not work in your jurisdiction due to different software or other operating environments. Check with your local telephone company business office for details.

Why PDF?

Q: Is there any practical reason why some companies store their downloadable files in PDF format? Wouldn’t a word processor be a better choice, considering the fact that everyone already has one of these applications? Is there some copyright advantage to not distributing an easily editable document? Does the PDF format have formatting capabilities that exceed common word processors or HTML? Thank you.

Mike, via email

David Rosen replies: As you probably know from your online experiences, there are at least three ways information can be stored for downloading. The first way is in something called an ASCII file, a plain-vanilla option that maintains the text portion of your document in a generic font.

The problems with ASCII format, however, are serious. First, ASCII doesn’t support many special characters across different hardware platforms, often making for a bizarre hodge-podge of strange characters. Second, ASCII text is plainly copyable, meaning that anybody

can download an ASCII file and have the source (i.e., the original text). This has serious copyright implications. Finally, ASCII files can’t contain anything but plain text-graphics, fonts, styles, margins, and everything else that “personalizes” your work is lost.

A second way of storing information is in

proprietary file formats such as those used in Microsoft Word or Corel WordPerfect. Unfortunately, many people don’t have these particular applications and even those that do won’t necessarily be able to properly read a document stored in this way. For example, missing or different fonts can cause serious

spacing and paragraph problems. Besides, some applications can’t read documents created by later versions of the same application! Microsoft is famous for this, but many other software vendors are guilty of this as well.

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You asked us...

continued from page 28

HTML (hypertext markup language) isn't a serious contender for your needs, since it was originally designed for to be an online information delivery tool and isn't able to generate well-behaved formatting.

Another alternative is Adobe's Portable Document Format ("PDF" for short). PDF files maintain the look and feel of a document across different hardware platforms even if the original application that created it (or the correct fonts) are missing. In addition, copyright issues can be overcome, since PDF files can be "locked" against the easy removal of the enclosed text and graphics. PDF readers are free for the download at Adobe's Web site (<http://www.adobe.com/acrobat>). In addition, the folks at Apple tell me that the reader comes pre-installed on many shipping Macs.

The many faces of OS/2

Q: What's the current version of OS/2? Or rather, what are the current versions? I've just seen a vendor offering OS/2 Warp 3, 4, Connect, and something just called OS/2 Warp. All with different prices. Confusing.

So I thought I'd check with IBM. The OS/2 pages seemed to indicate that Warp 4 is purely a network server OS (i.e., Warp Server), with Warp Client for network clients and not for standalone PCs. The IBM Direct pages (which I don't really recommend) sort of confirmed this, with separate entries for Warp 4 and Warp Connect 3 [sic]; however, the text about Warp 4 seemed to present it as a one-size-fits-all OS.

Phil

Kevin Linfield replies: The current client version of OS/2 is Warp 4. It includes full networking support, including the Internet Access Kit for home users.

The previous version of OS/2 (Warp 3) was available in four different packages: Warp for Windows, Warp (with Win-OS/2), Warp Connect (for Windows), and Warp Connect (with Win-OS/2). As indicated, some of the OS/2 packages included a licensed version of Microsoft Windows 3.1 optimized to run under OS/2, and some were designed to work with the actual Microsoft product. The Connect versions include full networking support for connecting peer-to-peer or through TCP/IP, Novell, Warp Server, or Windows NT Server.

As you indicate, having four client versions of OS/2 was confusing and with Warp 4, IBM released just one package, which is equivalent to a Warp 4 Connect with Win-OS/2. Warp 3 (all versions) has been superseded by Warp 4, although in many cases I'd recommend Warp 3 over Warp 4 (see the next question). As an aside, Warp Server 4 is Warp V3 with built-in LAN Server.

Different machines, different warps

Q: Which is better, Warp 3 or Warp 4?

Dale

Kevin Linfield replies: Warp 4 has many new features and functions, and with these extras come additional hardware requirements. Warp 3 was technologically superior to almost anything else on the market when it was released, but time has allowed its competitors to catch up. IBM wants all Warp 3 users to upgrade to Warp 4, but millions of people are still using

Warp 3. I personally would not recommend Warp 4 on anything less than a Pentium with 32 MB of RAM, but Warp 3 runs great on a 486 with 16 MB of RAM. I ran Warp 3 on a 386 with 8 MB of RAM for two years and while not the speed demon I'd like, it was satisfactory.

I personally am running Warp 3 Connect on

my work machine (a 486 DX2/66 with 20 MB of RAM), Warp 3 (with Win-OS/2) on my notebook (a 486 SX/33 with 12 MB of RAM), and Warp 4 on my desktop machine (a Pentium 90 MHz processor with 64 MB of RAM). So I'd say both versions still have great merit.

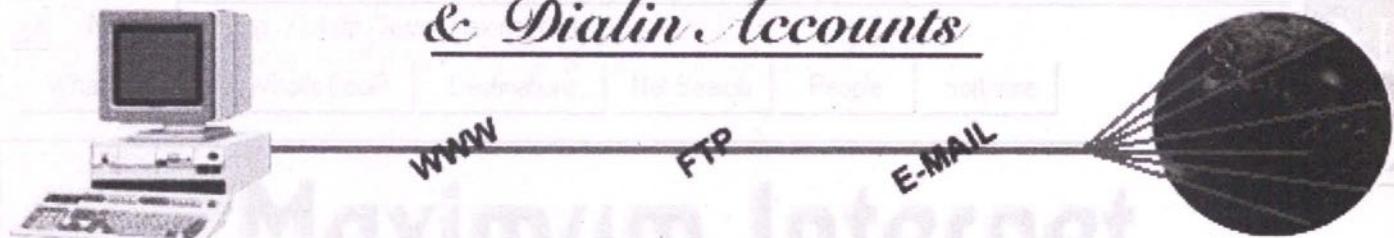
Disk-making dilemma

Q: I'm still running Warp 3, so I downloaded the IBM Works update from Hobbes, but when I try to make disks from the five disk images using LOADDISK I get the message "File not

continued on page 35

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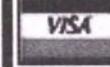
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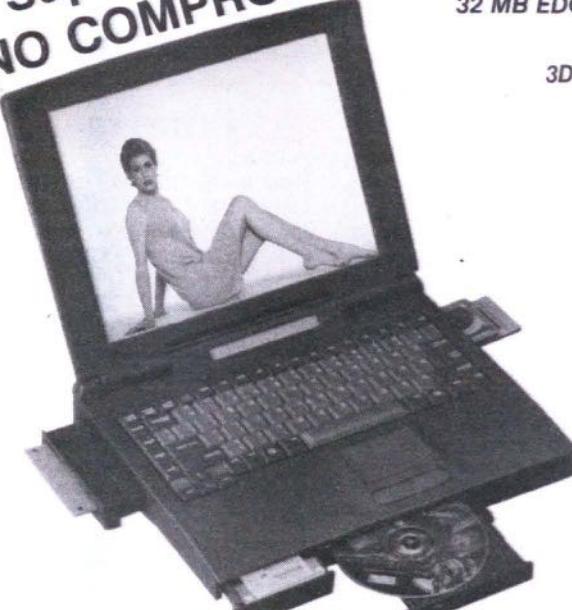
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You asked us...

continued from page 31

Disk-making dilemma

Q: I'm still running Warp 3, so I downloaded the IBM Works update from Hobbes, but when I try to make disks from the five disk images using LOADDISKF I get the message "File not compatible with LOADDISKF" and I get dumped back to the command prompt. How do I make disks?

Kenneth Kevin Linfield replies: The disks are the new (with Warp 3) eXtended Density Format (XDF), which means you can't use LOADDISKF.EXE to make disks. You must use XDFCOPY.EXE from the command prompt. Type "help xdfcopy" (no quotes) from the command prompt for information about this type of disk.

What append?

Q: I'm looking for a program to append files. Any ideas?

Tom Kevin Linfield replies: If you just want to append two text files, you can use EPM to load the first, then import the second. Or, from the command prompt type "type file1 file2 > file3" where file3 is the new file composed of file1 followed by file2.

Combo platter

Q: Can you tell me which is a better combination, OS/2 Warp 3 and Windows 3.1 or Warp 3 and Windows for Workgroups 3.11?

Larry Kevin Linfield replies: Warp 3 for Windows was designed for Windows 3.1. It was rumoured that Microsoft came out with Windows 3.11 just to prevent OS/2 from gaining market share. OS/2 will not use any of the extra features of Windows for Workgroups over regular Windows, and in order to install Windows 3.11 you will need a special disk from IBM. So to answer your question, you should use regular Windows 3.1 if you are using OS/2 for Windows.

The hidden Lotus

Q: In your November column you mention four Warp 4 CONFIG.SYS environment variables, each of which begins with the letters "SC" (e.g., SCKILLFEATUREENABLED). I'm curious to know the significance of the "SC". Thanks for your interesting column.

Stanley Kevin Linfield replies: The WarpCenter is not a new tool from IBM as many people believe. It was derived from Lotus' SmartCenter (SC), which was an extra feature included in Lotus SmartSuite for OS/2. After IBM bought Lotus, they added the SmartCenter to Warp 4 and changed the name, although the "hidden" switches still refer to the program as SmartCenter.

Conventional DOS memory and Win95

Q: How can I increase my conventional memory so that I can run some DOS stuff? I am using Version B of Win95, and, since it's not an upgrade, I have no DOS directory. I have 416KB conventional memory and want to know how to increase it to at least 600 or hopefully better. I am an old DOS man, so Win95 is new to me. Any help sure would

be appreciated.

Mike Howard Alan Zisman replies: The same-old DOS tricks still work. Win95 isn't as new as it appears. Win95 doesn't, by default, load a DOS memory manager such as EMM386 or QEMM, and doesn't create upper memory

blocks or load COMMAND.COM, DOS drivers, or DOS TSRs into upper memory. As a result, even though it makes many or most DOS drivers and TSRs unneeded, users can still end up with less free DOS (conventional) memory. You'll find the core DOS utilities either in your \Windows folder or in

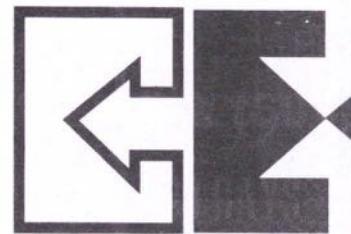
\Windows\Command.

Just as with older DOS versions, you can load a DOS memory manager. To use DOS's EMM386.EXE, (which is included in your Windows folder), for example, add the line "Device= C:\Windows\EMM386.EXE" (no

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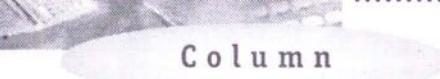
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Column

Violent games

continued from page 26

Computer and video games are not the only or even the main cause of this attitude, of course. They're simply a symptom, along with violent TV shows and movies aimed at pre-teen and adolescent audiences. As these themes become more and more widely expressed, it's easy to become used to them—to not even notice them. Not long ago, computer publisher Ziff-Davis's AnchorDesk Web site promised a look at a group of driving games, with demos available for download. Four out of the five games listed used cars as a way to kill, wound, or maim. When I emailed them that this wasn't about driving but more about killing, the site's authors' didn't seem to get the point—to them, violence and game playing seemed synonymous.

As with movies and TV, the game producers are responding to threats of censorship with self regulation. Sega, for example, rates its games as suitable for general, mature, or adult audiences. Nintendo models its ratings on those of the Motion Picture Association of America. When Electronic Arts' NHL 98 added fights on ice, this was noted in the small-print on the box.

Scandinavian societies have been notably tolerant of sexually oriented movies and games; they, however, believe that North American-styled violent media are much more dangerous, and have been willing to censor and ban such material.

Vancouver's schools have a policy of not allowing violent games to be played on school computers; many parents aim for similar rules at home. Of course, they have less control over what their children play at friends' houses, or in the arcades. My Joey admits to going to friends to play games that were banned at home. But now, he's decided that most such games are "boring," and he prefers, he says, games with less gore and more plot.

For research on violence and video games, check out <http://www.igc.apc.org/midiasecope/vidbib.htm>.

In far-away Finland (just a click away on the Internet, Roberto Bianchi has posted a site devoted to downloadable, certified non-violent games, in your choice of English, Italian, or Finnish. Check out <http://www.sci.fi/~roberto>.

As always, I welcome your feedback. ♦

If this column has provoked some thoughts of your own, you send them to Alan via email at azisman@mail.bc.rovers.wave.ca.

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Swedish firm unveils Whisky '98

COMPILED BY KEVIN LINFIELD

Uniqum Systems has released Whisky '98, a complete guide to whisky and bourbons from all over the world. The CD-ROM covers more than 750 different brands of whisky and more than 200 distilleries. The different brands come with pictures, labels, and tasting notes, as well as background information.

Uniqum, Tel: + 46 31 510685.

Web site: <http://www.uniqum.se>

Jeeves to the rescue

Lincoln Beach Software has released Download Butler, a utility for collecting and categorizing downloaded files. Working seamlessly with Netscape Navigator, Internet Explorer, or other browsers, downloads are captured in a tabbed notebook to organize files. MSRP US\$29.

Lincoln Beach, Tel: 314-861-1500.

Web site: <http://www.lincolnbeach.com>

Surf your TV

BeyondTV has been launched by ViewCall Canada Inc., becoming Canada's first personalized Internet television service. For \$29.99 a month, BeyondTV includes

Internet access, five personal accounts, and five email addresses. Users with Internet access can receive BeyondTV for only \$9.99 per month.

ViewCall, Web site: <http://www.beyondtv.net>

Intel and DEC friends again

Digital Equipment Corp and Intel Corp have announced a deal to establish a broad-based business relationship and settle all litigation. The agreement includes the sale of Digital's semiconductor manufacturing operations for US\$700 million to Intel, cross-licensing of patents, supply of both Intel and Alpha microprocessors, and development of future systems on Intel's 64-bit processors.

Intel, Web site: <http://www.intel.com>

DEC, Web site: <http://www.digital.com>

Trace your roots

Individual Software Inc. has announced its Create Family Trees Quick & Easy software package. With an estimated street price of US\$19.95, this genealogy program enables users to easily compile a family history database and construct detailed family trees with extensive multimedia information on each person.

Individual Software, Tel: 800-822-3522.

Web site: <http://www.individualsoftware.com>

BeOS book

O'Reilly & Associates has released *Be Developer's Guide* (ISBN 1-56592-287-5), the official programmer's reference to the Be operating system. The book and CD-ROM (containing the entire BeOS) package has been divided into the Application Kit, the Storage Kit, the Interface Kit, the Kernel Kit, and the Support Kit. It has a suggested retail price of US\$49.95.

Encarta DVD

Microsoft has jumped on the DVD bandwagon by releasing the Encarta DVD-ROM Reference Suite 98. This package includes enhanced versions of Microsoft's electronic encyclopedia (Encarta) and Encarta Virtual Globe with Microsoft's Bookshelf (reference library). Available for Windows 95/NT for an estimated retail price of US\$129.99.

Latest Linux with phone support

Red Hat's latest release of Linux (5.0) now features phone support contracts aimed at commercial customers and resolves some ease-of-use issues that non-technical users found scary.

Red Hat, Web site: www.redhat.com ♦

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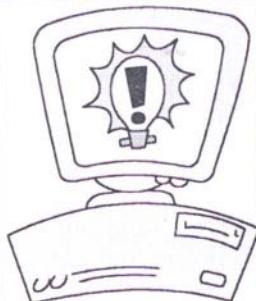
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Feature

Hackers and crackers

A brief history of cyberthievery and virtual vandalism

BY S.J. ROSS

If you own a computer and have online access, you'd have to be blind to overlook Internet and mainstream hacker news stories, deaf to miss the rallying cries for tighter Internet security, and dumb to neglect taking precautions.

Because, for every blind, deaf, and dumb user, sysop (system operator), or Webmaster who, for example, chooses obvious or common passwords, neglects to plug security holes, or ignores information and warnings from sites, such as the Computer Incident Advisory Capability (<http://ciac.llnl.gov>) and Computer Emergency Response Team (<http://www.cert.org/>), there is a hacker armed with patience, persistence, and a virtual bag of tricks—such as Trojan horse programs that, when inserted into your network, leave your virtual backdoor unlocked—just waiting to invade your system.

And, once inside your network, the clever hacker can do everything from reading confidential files, to stealing proprietary information, to corrupting or destroying your network.

A quick glance at a few well publicized cases demonstrates some of the more notorious hacker exploits. For example, there is the hacker who changed the Central Intelligence Agency home page to read "Welcome to the Central Stupidity Agency," the one who placed a picture of Adolf Hitler and a swastika on the U.S. Justice Department site, and the one who altered the Amnesty International home page by adding graphics and text.

And then there is the hacker who replaced an Air Force Web page containing information on fighter jets with a pornographic photograph, the one who smeared the NCAA site with white supremacist slogans, and even the hacker who altered the Los Angeles Police Department site

continued on page 41

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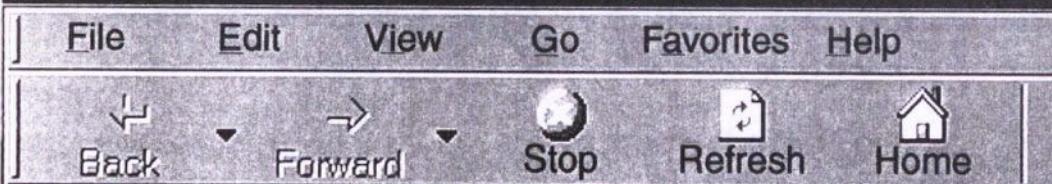
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Feature

Hackers and Crackers

continued from page 38

to read "Death Squad Home Page."

And you are living in a fool's paradise if you think hackers cannot find a way into an unsecured system—and even into quite a few supposedly secure systems.

A proud history

The word "hack," an MIT term for a clever student prank, grew into hacker, or a person capable of quickly writing a required program. Now, although traditional hackers hate us using "hacker" to denote computer criminals (they call them "crackers"), hacker has slipped into common usage as a person who breaks into computer networks and Web sites.

Probably the most publicized hacker is Kevin Mitnick. Mitnick, whose adolescent fascination with ham radios led to a teenage fascination with telecommunications systems and an adult fascination with computers, was an accomplished phreaker (telephone hacker) and computer hacker. Mitnick broke into hundreds of computer systems until, after a number of cyber crimes to his record—including the 1988 accusation of causing \$4 million damage to government computer systems and stealing \$1 million worth of software—the FBI arrested him in 1995 after he

allegedly broke into a network owned by a computer security specialist to steal telephone source code.

Other infamous hackers range from Kevin Poulsen, who was the first hacker to be charged with espionage, to Robert Tappan Morris, the Cornell University student and son of a computer security expert who wrote the 1988 Internet worm (a destructive, self-replicating program) that invaded thousands of computers, the competing cybergangs of Masters of Deception (MOD) and Legion of Doom (LOD) who specialized in cyber-pranks, and the German cybergang who stole proprietary information and sold it to the KGB.

In other words, clever hackers—clever enough to gain superuser status or root on Unix systems and leave behind programs to, for example, collect passwords—can gain access to files, destroy, corrupt or erase data, and collect confidential information such as credit card numbers, for personal use or sale.

But are these isolated incidents or is this a hacker epidemic?

According to Sgt. Bob Davis, the RCMP does not know (although they do offer some interesting information at <http://www.rcmpgrc.gc.ca/html/rccmp2.htm>). They keep no national records or statistics on hack attacks

continued on page 51

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Man of War sets sail for victory

BY WILLIAM A. WOOD

RATING:

Most new strategy games (and we're practically drowning in them) offer more and more control over the armies at a player's command. *Man of War*, a new game of conflict at sea set during the "age of fighting sail" (1765-1815), offers less—and that's just fine.

MOW is a convincing simulation of bat-

ting ships of the line, of cannons and wind and watery graves. Through 12 pre-made historical scenarios (such as Trafalgar and Ushant), a 10-scenario campaign, and as many custom battles as you can dream up (using the excellent scenario editor), *MOW* will challenge players to succeed where many a famous admiral won glory (or failed).

What makes this game particularly interesting, and challenging, is the level of control (or lack thereof) players have over their ships.

At the beginning of a scenario, players must establish the engagement "doctrine" (the default behaviour) for their ships: basically how close to approach the enemy, how close to open fire with cannons, and whether or not to use "combat sails" (which reduce sail vulnerability, but also maneuverability).

Mapping it out

The game then has two basic stages. There is a planning phase, where ships, individually or in groups, can be given 15 different orders (represented by flying flags—hence the term "flagship"), such as "sail this bearing," "hold location," "rally," or "rile." The planning screen resembles an old map and is quite beautiful, and the order system is remarkably easy to use.

Once the orders have been assigned, the game switches to a four-minute, 3D "resolution" phase. Players are aboard their flagship, and can run about the decks looking at the battle unfolding around them (there's a spyglass function for examining ships close up). The sky, sea, and ships are all quite breathtakingly depicted. This game is truly a wonder to behold.

And that's a good thing, because, at this point, players are along for the ride only. They cannot influence the battle around them—not even their own flagship's course. Planning will tell as the vagaries of the wind and the enemy's actions take their toll on the player's strategy.

Once the turn is over (players can control how fast time moves, or even skip the phase altogether), it's back to the planning phase to chart the next four minutes.

Victory is won based on a point system that

info box

Man of War, from Strategy First Inc. and Simulations Canada (distributed by Virgin Interactive). DOS/Wings CD-ROM (includes Dorling Kindersley's *Stowaway* as a bonus). \$50 (street). Requires: Pentium (120 MHz and up recommended), 8 MB RAM (16 MB for Wings), 50 MB hard-drive space.

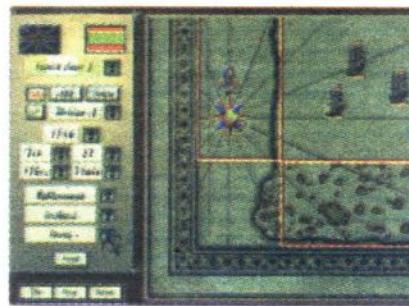
compares the fleets on the basis of the total number of cannons, and crew proficiency. Thus, there are no real mismatches—a fleet that starts with a 100-gun "advantage" has to end the scenario with a 200-gun advantage (based on ships sunk, captured, or fled) to win. The enemy simply has to prevent this.

Man of War is quite tricky, especially when trying to deal with the wind. Patience is key. Those that rush into their enemies guns will pay a heavy price.

Sailor's delight

There are lots of little touches that really make this game sparkle: the atmospheric sound effects (such as the creaking of timbers and the roaring of cannons); the simple yet well-designed manual (yay!), which includes over 30 pages of historical information about the conflicts and ships of the age; and multi-player gaming (sink your friends!). And it's proudly Canadian, too.

All in all, a real delight. ♦



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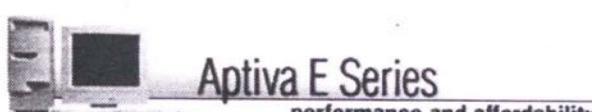
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more independent.

This research and development team is among the few groups in the world specializing in independence-enhancing technologies. According to engineer, Dan Leland, the goal is to develop appropriate human machine interfaces to look at a person's abilities and then provide a technological solution.

The JOUSE, for instance, is a blend between a joystick and a mouse that allows severely disabled people to operate a computer. This mouth-operated device provides three distinct features: First, the user can easily move and steer the cursor on the screen by mouth movements. Secondly, the joystick shaft is a hollow tube operated by a "sip and puff" action. By sipping and puffing, the user activates the select and return functions that an able person produces by clicking mouse buttons. Thirdly, the JOUSE allows the input of Morse Code using the sip and puff action.

"Before we had graphical user interface (GUI) software," Leland explained, "disabled persons used to enter keystrokes using Morse Code. Many were faster than some typists. But Windows came along and it became very difficult for them to enter information and to move around the screen. The JOUSE solves that problem."

"One fellow went back to school," Leland continued. "He studied architectural design at BCIT. With the JOUSE, he can do a CAD [computer assisted design] drawing as fast as an able bodied person can." The device requires very little mouth movement and can be used for long periods of time without causing muscle fatigue or stress.

"But we really took our technology to the limits with the sailboat project," said Leland. "The Disabled Sailing Association of B.C. contracted Alvis Marine of North Vancouver and ourselves to modify a sailboat to make it accessible to quadriplegics. We built a sip and puff interface to allow disabled persons to control the rudder and the main sail." This was the first boat of its kind world wide, and feedback was exceptional. The BBC, in the U.K., aired a show and calls came in from Holland, the U.S., and other locations.

Products under development include the Robotic Work Station, an "office assistant" that handles paper. The robotic arm loads paper into a printer or photocopier or picks

continued on page 51

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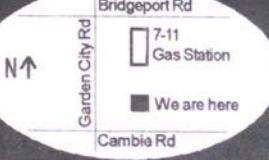


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Software

Knowing your enemy

continued from page 14

detection. Previously, the rule was to scan every program from a non-commercial source, such as a computer bulletin board or the Internet, or even from a friend. Documents were safe. Now, all Word documents should be checked carefully, no matter what the source. Even Microsoft has been known to ship out infected documents!

Fighting back

Finding an anti-virus program is simple; finding an effective one is another question. Fortunately, the National Computer Security Association operates a certification lab that checks anti-virus software and certifies each new version for effectiveness. This information is available on its Web site.

It's also a good idea to use two different products, since new viruses are being released at a terrifying rate, and every vendor may not detect and remove all new viruses with each version of its software. Keeping your copy of the software up-to-date is critical as well. This means visiting the vendor's Web site for updates regularly, or, if it has one, subscribing to its new version notification service.

If you do find a virus on your system, learn all you can about it. Most anti-virus software

vendors maintain online libraries where you can find what a virus does, and how it spreads. Network Associates (formerly McAfee Associates) has an excellent, searchable setup online. Symantec (the Norton Anti-Virus folks) has its Anti-Virus Research Center, and information is also available at Data Fellows' (F-Prot anti-virus software) site. Computer Associates (Cheyenne InnocuLAN) offers very good general information on viruses at its Web site as well.

If you suspect an infection, turn off your PC (don't just hit CTRL-ALT-DEL to reboot—a virus in memory can only be removed by shutting off the power), and boot it from a clean, write-protected floppy disk, then run your virus checker. Note all details if a virus is present (you'll want to look it up), and warn everyone who could have received a file from you to scan their systems. Scan all of your floppy disks as well—it's a tedious task, but it beats re-infecting your machine.

Of course, the best defense is a rigorous program of virus scanning, combined with good backups. Any new file should be scanned before opening or executing (even if it came from your company president!), and floppy disks should never be left in drive A:. Trust no one! It only takes one slip-up at the wrong time to demolish your system. ♦

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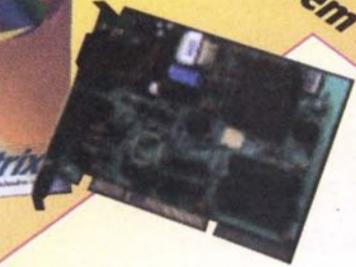
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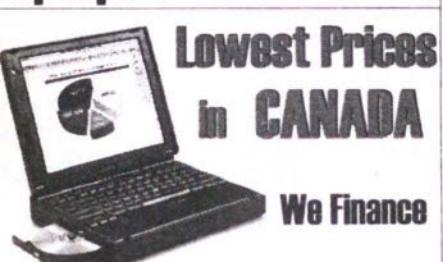


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quotes) to your CONFIG.SYS file, with the RAM or NOEMS parameter depending whether you want it to create EMS memory or not.

Then, add the line "DOS=HIGH,UMB" to CONFIG.SYS, and change all the "Device=" lines (except HIMEM.SYS and EMM386.EXE) to "Devicehigh=".

Similarly, add "LH" (or Loadhigh) to the beginning of any lines in AUTOEXEC.BAT that load DOS TSR programs. Reboot and check the amount of free DOS RAM, using the DOS Mem command. (Mem /C /P for a more detailed report). Alternatively, if you can dig up a copy of DOS 6.2x's MEMMAKER (there's also a copy on some Win95 CDs), you can use the F8 boot menu to boot to a DOS prompt and let MEMMAKER do the fiddling around. Either way, you should be able to get at least 605KB free without much trouble.

Getting to know NT

Q: I'm about to install NT server on one of the systems here, and have the other as a workstation. My questions are:

1. How much hard drive space will it take up?
2. Can I easily boot into Win95 if needed?
3. How can I install it, and have it boot into Win95 (for the time being)?
4. Is its "visual" layout similar to the Win95 Desktop/Start Menu?
5. Any specific issues I need to watch for when keeping Win95 on the same system?
6. Does it install into its own subdirectory, and can I just install it onto a different partition, or even a separate hard drive?

Dennis Brown

Alan Zisman replies: NT takes quite a bit more drive space than Win95. Win95 needs about 50 MB or so; NT needs about 100 MB or more. As always, all estimates are rough, depending on options selected. NT (Server or Workstation), if installed onto a system with Win95 pre-installed, will automatically set

itself up for dual-boot if you install it into a different directory from your current Win95 (probably C:\WINDOWS). If you have multiple partitions on your system, it will be cleaner if you install it into a different partition-aside from a few boot files, NT doesn't need to be on C:.

At the beginning of bootup, you will automatically get a boot menu with choices of NT Server, NT Server in VGA Mode (sort of like Win95's Safe Mode) and "Windows". NT Server will be the default, but you'll have several seconds to change this if desired.

NT 4.0 uses a Start Menu, Taskbar, Recycle Bin, My Computer, and other elements of the Windows 95 interface. NT doesn't migrate applications/settings from Win95—you'll need to reinstall fonts, applications, and so on. You can reinstall applications over the Win95 installations, so you'll only need one actual copy installed (saving some hard-drive space)—but you need to use the applications' setup programs to write to the NT Registry in addition to the Win95 Registry, and copy required *.DLL (etc.) files to NT's SYSTEM32 folder.

- Send Mac-related questions to the MacShrink via email at MacGuy@tcpcon.com. All questions become the property of MacShrink and David Rosen.
- Send OS/2 related questions to Kevin Linfield at linfield@torfree.net.

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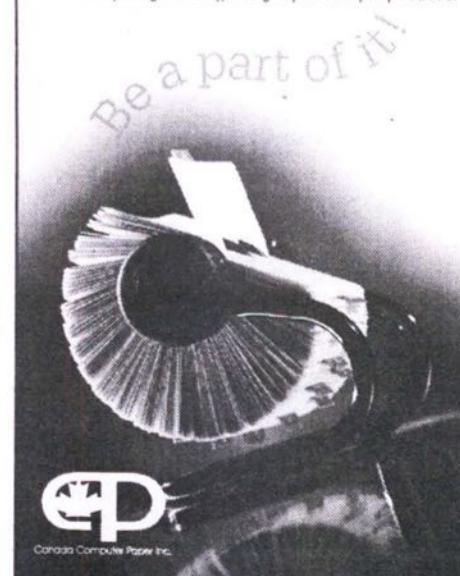
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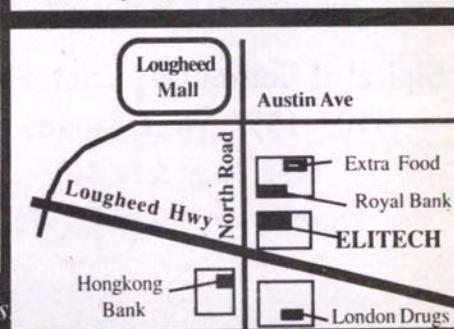
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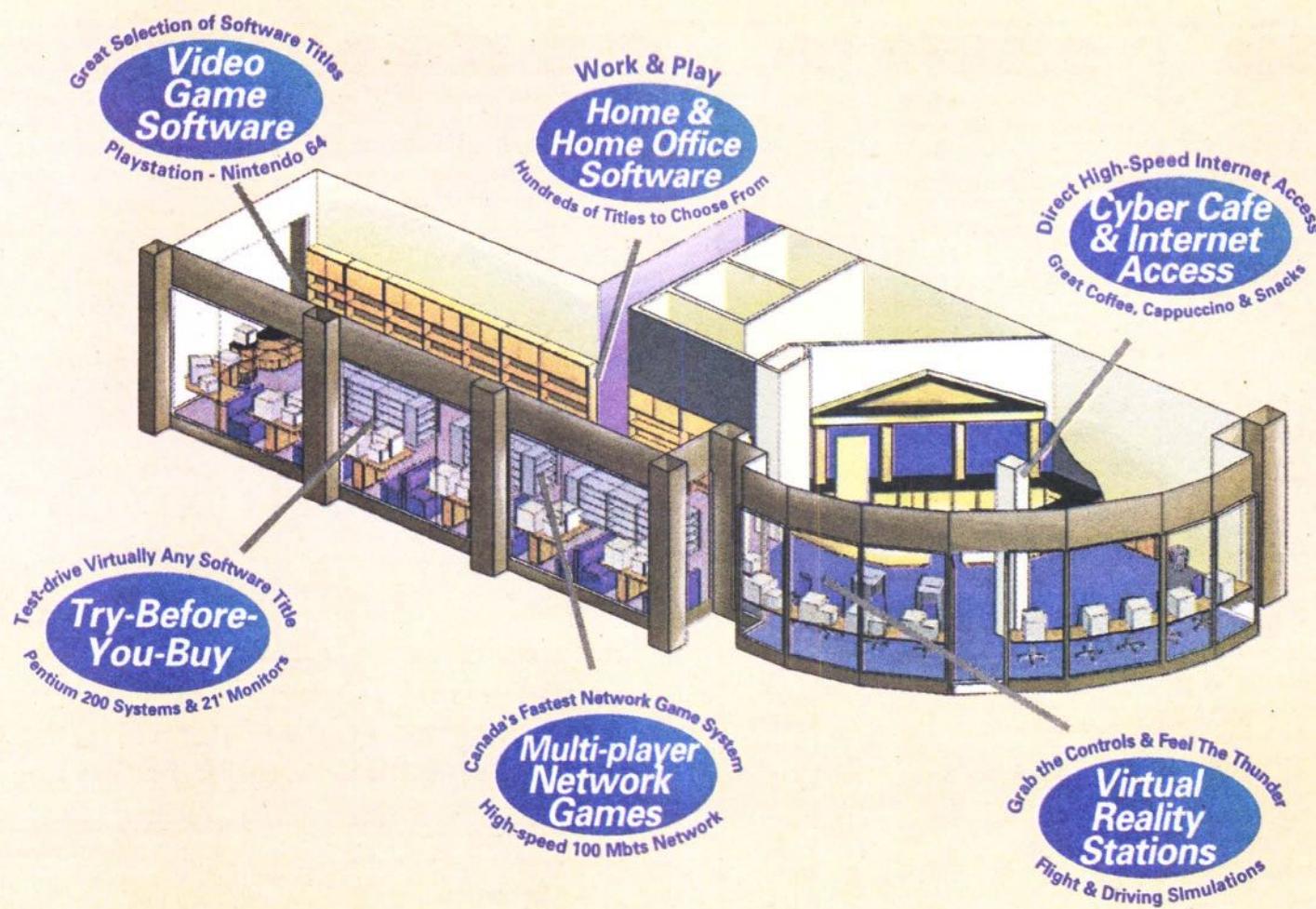


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Hackers and Crackers

continued from page 41

and even if they did, their refusal to discuss current cases means any information they release is pitifully out-of-date.

Corporations and ISPs (Internet service providers), the likeliest target of a hack attack, may know, but, for the most part, they are reluctant to publicize it. Could their desire to have us conduct banking, purchasing, and other potentially sensitive transactions via the Internet influence their willingness to talk?

For example, Perry (a pseudonym), a teenage computer hacker, freely admits to hacking into AOL Canada with fake credit card prefixes. "All together I hacked over 50 AOL accounts," says Perry. He also claims to have friends who can use programs such as a password stealer to steal passwords and account fishers to take over accounts. But

Stephen Bartkiw, managing director at AOL Canada contends, "I'm not aware of a hacker or a group of hackers having had a significant impact on the members online" although he notes "I don't know if anyone has gained access through false credit card information." However, as an interesting addendum, earlier this year AOL cut direct dial access in Russia reportedly due to high levels of credit card fraud—precisely how Perry claims to hack AOL Canada accounts.

So what are we to do? Follow simple precautions, such as inventing unique and private passwords. Avoid sending email containing sensitive information. Restrict access to your computer. And discuss all concerns with your ISP or sysop, and any organizations with whom you conduct Internet-based business. Because, to do any less, is paramount to turning a blind, deaf, and dumb face to the problem. ♦

adjust the drapes or activate a security system. The Gateway is operated either through the controls mounted on the wheel chair, or through the use of a variety of ability switches (which may be activated by head movement, blink movement, or other movement.) Three Remote Gateway units are ready to be installed in local homes for evaluation.

But the best is yet to come. Research is underway to develop electronics that will use brain waves to operate switches and ultimately the computer. The motivational message "If you can think it, you can do it," may become a reality! ♦

Foundation design

continued from page 44

up and opens a file. No hand movement is required from the user, as the control device is a software-operated computer peripheral. The Work Station is currently being tested at a work site.

The Remote Gateway, also under development, is a computerized interface that can be mounted to a bed or a wheelchair, allowing remote control of the environment through the use of wireless technology. Users can answer the phone, turn on the lights or the television,

Virtual lock and key

continued from page 15

system for transferring files to a specific person. And like PGP, FYEO files can be encrypted up to 2,048 bits.

FYEO also adds some neat features, such as a secure screen saver. If your system is not in use for a specified amount of time, re-accessing the system requires the use of a password.

As a package, FYEO excels in manageability. For an office where several people may use the same system, and where security is imperative, FYEO is an excellent choice.

FYEO does have some drawbacks, however. Primarily, it lacks a broad user base. Should you wish to secure mail to a client or business partner, chances are they are won't be using FYEO.

The program itself has some rough edges. I had to disable the secure screen function while using DOS programs, because FYEO confuses DOS programs with inactivity and kicks in with requests for proper authorization.

Norton's FYEO can be ordered through the Symantec home page (<http://www.symantec.com>), and retails for US\$89.95.

Verisign Digital ID

Verisign's Digital ID is the secure email software package preferred by Microsoft Outlook. Right now Internet users can download a six-month trial version of the software (<http://www.verisign.com>).

The full version goes beyond encrypting messages, costs US\$9.95 per year, and is also available from the Verisign home page.

While Digital ID includes secure email functionality, its real value is its ability to facilitate online transactions and entry into password-protected sites.

Unfortunately, Digital ID has a limited and inflexible encryption capacity that does not compare well with either FYEO or PGP. Digital ID's encryption is capable of only 40 bits (versus FYEO and PGP's 2,048). The limited 40-bit encryption means Digital ID is not subject to U.S. export laws, which means its international user base may evolve rapidly, especially in areas where its more powerful competition is unavailable. On the other hand, its international availability means its encryption is so weak no government is afraid of it. Users who place a premium on security rather than convenience should not look to Verisign's Digital ID.

The key strength of Digital ID is the ease with which it integrates into email software. The encryption and signing process is virtually transparent. The software automatically unscrambles encrypted messages as they are downloaded.

Verisign's Digital ID is available for Netscape Messenger, Eudora Pro, and Microsoft Outlook. ♦

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Windows 的愛與恨

作者：林啓清

一、前言

對於電腦新手來講，Windows 是一個很方便的操作系統，視覺化的操作，讓從來沒用過電腦的人，可以很快就上手？

當大家正在為微軟鼓掌的時候，卻沒有人想起這個很漂亮的操作界面，原來是抄自一家叫APPLE的公司。

微軟的大部分軟體都不是他自力開發的，不是買來的就是抄來的（請原諒我這樣說），

但也唯有靠微軟才能讓這些軟體發揚光大……

微軟擅長的就是賣一些拼湊而來的軟體，換湯不換藥一賣再賣，可憐的我們也一再掏錢去買（當然也有人不買囉）？

軟體業是最不需要生產材料的，只需要有創意及一部電腦，就能產生一套達到商業價值的軟體？買別人發展好的軟體，這是最輕鬆的，就好像貿易商一樣，低買高賣？

微軟是一個好的貿易商，他會替軟體打點好一切的門面，明明很爛的軟體，卻能以很不合理的價格在市場上銷售？

誰說Internet盛行後，貿易商就幾乎沒有生意機會（大家都靠Internet找產品）了？Microsoft就是一個世界上最大的貿易商，不是嗎？

二、何謂Undocument

有很多電腦老手一邊用Windows一邊罵：微軟有太多的東西沒有公佈，在手冊上都是輕描淡寫帶過，還要靠一些Hacker去把它們給挖出來？

其實，這不能怪微軟，因為軟體都是別人寫的，別人在裡面藏了什麼怪東西，微軟也不是很清楚？

這就是為什麼微軟的軟體會一直出現問題，因為只要原先的某一位作者（一般來講，一套軟體都是許多人合力寫的）微軟沒有搞定（例如，錢分得不夠？），難保那位不平的作者不會在Internet上大爆內幕（軟體破洞或

軟體瑕疵）？

以軟體設計者的習慣，大多會在所設計的軟體裡暗藏一些，只有作者透過特別手法才能啟動的功能或自動啟動程序？

這些暗藏在軟體深處的設計，在平時並不會干擾使用該軟體的使用者，但在特別的情況（例如修改作者名字或是類似的事）會有特別的動作自動被啟動？

在早期的DOS環境，由於程式很單純，所以就算有暗藏這類的軟體開關，也很容易透過分析軟體而找出來。

但現在的Windows環境，動不動就好幾十MB或幾百MB的檔案，要分析真是越來越困難？由於現在都是屬於OOP設計，真正夠功力的程式師也越來越少，也讓中高級的程式師越來越好混……；Q君不見現在市面上已經有xxxxSecrets的書越來越多了，這都是拜Microsoft所賜，沒有Windows就沒有Secret？

前陣子，Yahoo也被Hacker侵入，讓所有透過Yahoo來搜尋資料的人，都會收到一段警告訊息（大意是，他們都透過Yahoo而感染到電腦病毒）？

所以，如果您現在用的是微軟的產品且連接在Internet上，建議您別把重要的資料（像商業秘密之類的）放在這部電腦上面，以免有人透過Internet利用微軟所提供的方便平臺，在您的電腦裡翻箱倒櫃您還不知咧！

三、幾個Windows 95的Tips

筆者在這裡提供幾個有用的小把戲，讓各位讀者們玩玩……:-)

(1) 在開機時自動顯示選擇選單

請進入Windows後，切換到C:的根目錄下(C:\)，然後執行下列的命令：

```
attrib -s -h -r c:\msdos.sys
edit c:\msdos.sys
```

進入編輯畫面後，在[Options]這個部份的下面多加上一行

BootMenu=1

然後把該檔(MSDOS.SYS)存起來，然後打入EXIT回到Windows後，選用Windows的關機功能，讓電腦重新開機後，您就會看到一個選單了？

(2) 不想看那Windows的LOGO畫面

如果您已經修改過MSDOS.SYS（在前面所提，使用Attrib）的屬性，現在就可以直接改MSDOS.SYS的內容。

進入編輯畫面後，在[Options]這個部份的下面多加上一行

Logo=0

然後把該檔(MSDOS.SYS)存起來，然後打入EXIT回到Windows後，選用Windows的關機功能，讓電腦重新開機後，您就不再會看到國旗飄揚了……

(3) 不想讓Windows自動Scandisk

當您的Windows當機（很正的嘛），逼得您不得不用不正的關機，重開機後還得等Windows在那邊掃描硬碟，實在是心急如焚？

可不可不要不讓Windows自動去掃描硬碟呢？當然可以！

如果您已經修改過MSDOS.SYS（在前面所提，使用Attrib）的屬性，現在就可以直接改MSDOS.SYS的內容。

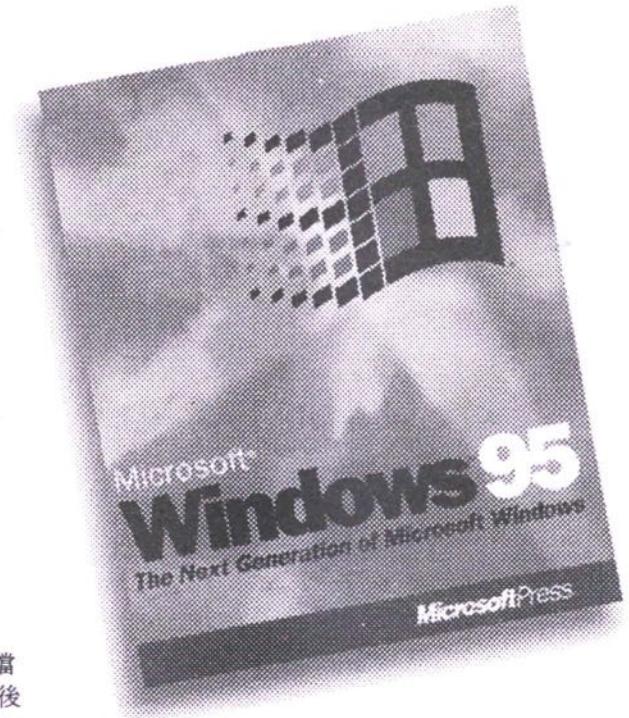
進入編輯畫面後，在[Options]這個部份的下面多加上一行

AutoScan=0

然後把該檔(MSDOS.SYS)存起來，然後打入EXIT回到Windows後，選用Windows的關機功能，讓電腦重新開機後，您的Windows就不再會那麼難捱了？

PS. 當您不正

關機後，由於您取消Windows自動Scandisk的功能，所以筆者建議您一段時間就手動去執行



掃描硬碟的功能（在附屬應用程式裡的系統工具裡面）。

好玩吧……？

玩完後，別忘記把MSDOS.SYS的屬性給改回來：

attrib +r +h +s c:\msdos.sys

四、結語

Windows又死了？Windows一直重新開機？Windows又……！@#!\$#@

當您用了Windows後，惡夢才剛開始呢？

如果您的Windows也出了問題，但是找不到人幫您？剛好您人也是在溫哥華，不妨打個電話給筆者（618-1866），也許我能幫上忙也說不定哦？

哦！對了……別擔心……筆者幫您修Windows，並不會傷到您原來的資料或是已經安裝的應用程式……；Q

如果您有任何批評指教，歡迎與筆者聯絡，以下是我的聯絡方式：E-Mail：jimlin@roger.wave.ca 有興趣的讀者，可以直接連到筆者的Web Site，URL是http://www.cads.com.tw

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知多一點點 (二)

使用手寫筆時可能遇到問題：

Q1. 使用精品漢筆V4. X昇級至V5. X為甚麼無法使用語音功能？
回答：

請將原目錄
c:\gp4wave -> c:\wave
另V5. X的粵語發音部份全面改動，必須購買V5. X的昇級光碟才能使用。

Q2. 為甚麼在使用MODEM後即無法使用手寫筆？

回答：
若在使用MODEM後，筆即無法使用，或使用手寫筆後MODEM即無法使用，請檢查COM1及COM2的IRQ是否衝突，一般正常的IRQ安排如下：

COM1->IRQ4
COM2->IRQ3

若您有加入COM3, COM4設定為MODEM或其他設備如MPEG等佔用同一IRQ，則會引發上述問題，應自行調整IRQ以免衝突。

Q3. 為何在英文WINDOWS下無法使用精品漢筆？

回答：
使用英文Windows 3.1和Windows 95或以上版本的Windows用戶，必須自行加裝外掛式中文系統，如加盟中文系統(Chinese Gateway)等，以顯示中文字。並在安裝時，設定正確的中文內碼。
(BIG5碼為台灣繁體中文，GB碼為中國大陸國家標準簡體中文)

Q4. 簡體WINDOWS下安裝出現亂碼
回答：

若使用GB簡體字碼，請在安裝V5.0時，執行SINSTALL. EXE。

Q5. NT PATCH 在國際中文 WinNT 4.0下出現亂碼應如何處理？

回答：
請在安裝時設定好系統的中文內碼，BIG5碼為台灣繁體中文，GB碼為中國大陸國家標準簡體中文，精品漢筆安裝於NT國際版時，必須配合系統內的中文內碼。

Q6. 筆跡常認錯或辨字率太差
回答：

請檢查精品漢筆是否已設定至最高辨識能力，即：辨識範圍->13051字，繁簡字體->雙核心繁簡辨識。

Q7. 無法辨識香港字

回答：
請檢查是否在精品漢筆中打開識別香港900字功能。香港字3000字僅供香港政府部門使用。使用香港字必須配合香港字字庫，或安裝精品漢筆中華工具坊內所提供的字庫。(此字庫僅合適繁體BIG5碼)。

Q8. 英文WINDOWS+外掛中文系統一次刪除兩個字

回答：
請在精品漢筆設定中更改中文視窗為中文微軟視窗。

Q9. 香港字在寫時看得到送出後卻無後顯示

回答：

使用香港字WINDOWS必須安裝香港字字庫，如安裝精品漢筆中華工具坊內所提供的中國龍中明體或香港靚字集(香港900字)等。

Q10. 精品漢筆寫時能夠顯示，送到應用程式上則成空白

回答：
請檢查所選的顯示字庫是否齊全

Q11. 精品漢筆Q版無法與PS/2 MOUSE無法共用

回答：
請下載網上的Q版DEBUG版修正以上問題。

Q12. 使用精品漢筆Q版，MOUSE失去原有功能

回答：
MOUSE若有特殊功能，必須使用自己的DRIVER，若與精品漢筆共同僅能使用標準MOUSE功能。

Q13. 執行精品漢筆Q版時，劃面一閃即逝，無法使用手寫。

回答：
請檢查精品漢筆觸摸板是否鬆脫或檢查系統IRQ是否衝突，若仍無法使用請洽當地經銷商進行維修。

Q14. 啓動時，出現錯誤訊息：“Hardware is not correct!”

回答：
請檢查精品漢筆手寫板是否鬆脫或手寫板上燈是否正常閃動；檢查系統IRQ是否衝突，若仍無法使用請洽當地經銷商進行維修。

Q15. 使用精品漢筆的人仕可在英文WINDOWS內自行選擇繁或簡體中文字，應該留意事項有：

回答：
要用簡體中文字的朋友，在安裝軟件時請選用“sinstall.exe”(GB Code)要用繁體中文字的朋友，在安裝軟件時請選用“winstall.exe”(Big 5)

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BC News Briefs

continued from page 8

program, Click@BCIT in mid-November. Located in the downtown campus, Click@BCIT is a new 10-station multimedia training centre for business and computer skills. Students use computer-based training (CBT) software to acquire skills in Microsoft Office 95, Netscape Navigator, or their choice of three Harvard Business Skills courses.

The multimedia software provides students with an entertaining, visually and audibly rich experience as they learn new skills, according to program promoters. "Interactive multimedia is really a whole new way to learn," said Valerie Brooks, manager of the CLICK@BCIT facility. "Research shows that this approach to software training can be as much as 75 percent more effective than a classroom approach. People not only learn faster, but they retention is up to 25 percent improved."

According to facilitator, Deirdre Grace, response from the first 15 students has been favourable. Since there is no instructor and no scheduled classes to attend, students work at their own pace and at their own convenience. Since a half-hour free trial is available prior to registering, participants can discover in advance whether this system suits

their learning requirements.

For information, call the downtown campus at 604-412-7777, or check out the BCIT Web site at <http://www.bcit.bc.ca>.

Online directory offers quality assurance

Residents of the Lower Mainland can now locate vetted, customer-oriented businesses through an Internet directory. According to co-founders John Four and Ronald W.M. Slinger of North Vancouver, Refer-all.com is thought to be the first online directory to pre-screen businesses for quality of products and service. Before registering with Refer-all.com, business owners meet with Four and are asked to sign a pledge of good service. Any customer complaints received about businesses in the directory are investigated, and businesses are given an opportunity to resolve the issue.

Refer-all.com also offers a free eight-page document entitled *Amazingly Successful Businesses and How They Do It*. To arrange to order the document, phone 604-984-6681, or visit <http://www.refer-all.com/>.

June Campbell is the owner of Nightcats Multimedia Productions. You can reach her by e-mail at campbelj@istar.ca or by phoning 604-980-3261 during business hours.



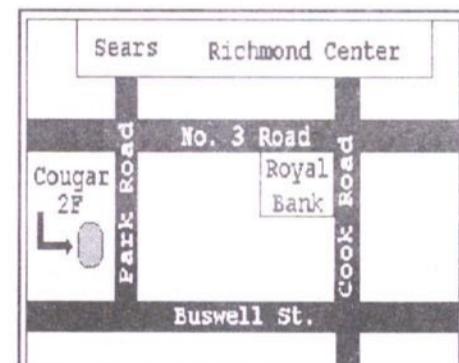
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24X CD-ROM , 16 Bit Sound Card		
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Upgrade Option:

32 MB SDRAM / 64 MB SDRAM	40 / 200
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Acer 33.6 / 56 K Int Voice Modem	70 / 115
Window 95 (SR II)	120

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ATX Tower Case, PS/2 Mouse + Pad		

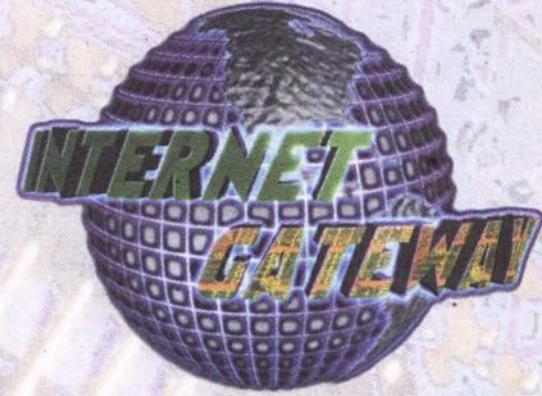
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Acer 33.6 / 56 K Int Voice Modem	70 / 115
Window 95 (SR II)	120

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ASUS TXP4 512K	\$175
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ASUS P2L97	\$250
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Fujitsu Ultra	Acer 15" 54E / 56C
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Quantum Ultra	NEC 15" A500 / E500 / M500
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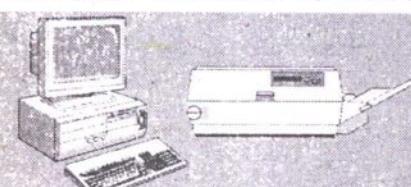
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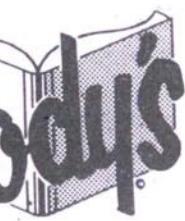
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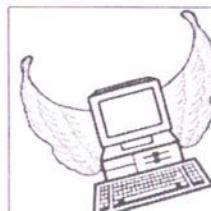
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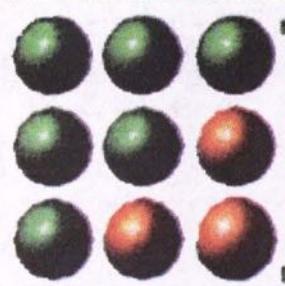
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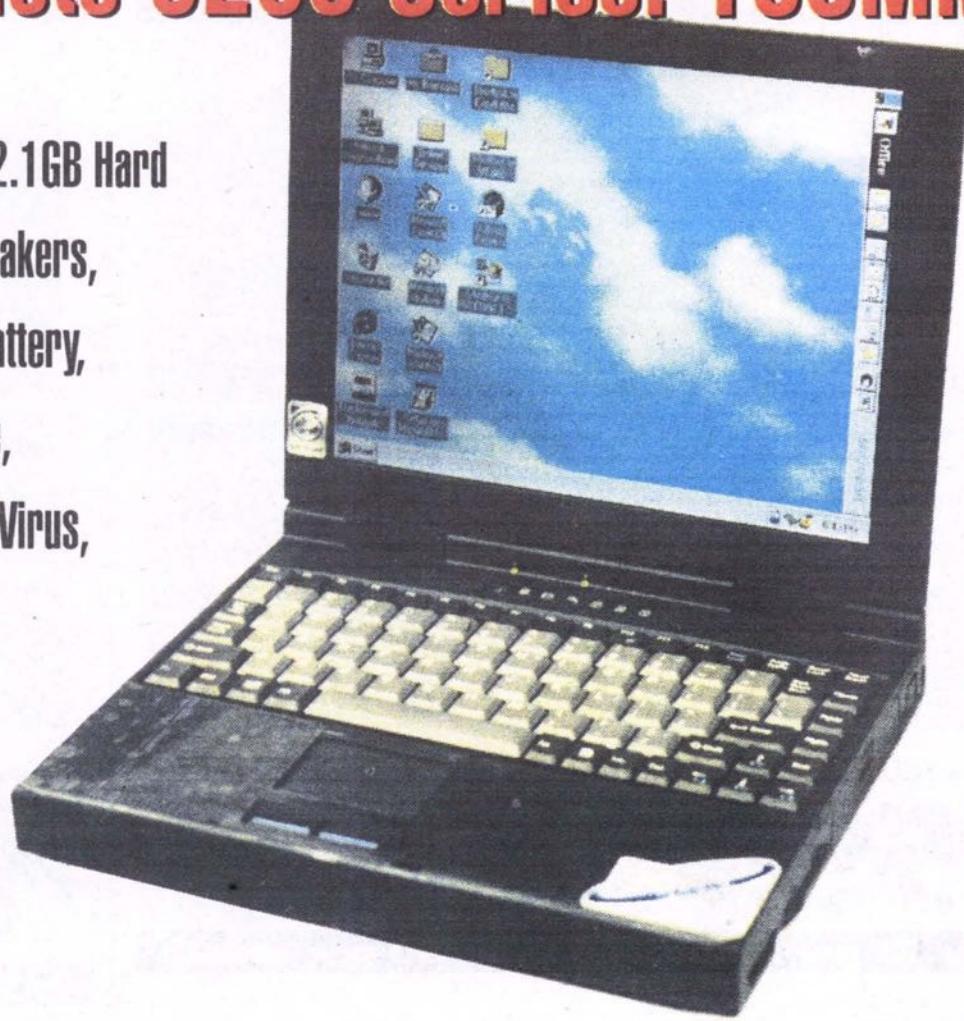
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